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ILLUSTRATIONS.

St. George's Church, Newcastle-on-Tyne.—Mr. T. R. Spence, Architect :—
    Interior View, showing general scheme of Chancel Decoration .... *Double-Page Ink-Photo.*
    Details of Chancel Decoration .... *Double-Page Ink-Photo.*
Students' Club at Erlangen, Bavaria.—Herr Theodor Eyrich, Architect .... *Single-Page Ink-Photo.*
Restored Front of Schwarzenberg Castle, Franconia.—Herr Theodor Eyrich, Architect .... *Single-Page Ink-Photo.*
New Lodges, Park Hatch, Godalming.—Mr. E. L. Lutyens, Architect .... *Single-Page Photo-Litho.*
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A Review of the Birmingham Art Congress.

THE weakness of an Art Congress, as compared with a scientific one, of course lies in the fact that art is really concerned with producing original works and not with inquiring into facts about existing phenomena. Science is necessarily progressive, and has newly-discovered facts to impart at each periodical meeting; art is not necessarily progressive (though many critics in the present day seem to think it is), and papers on artistic subjects, unless when they are concerned with imparting either historical records as to past epochs of art, or technical information as to modes of working, are necessarily of a critical order, and deal in the discussion of opinions and principles. That art-criticism is not art no one knows better than some of the eminent artists who read papers at the Congress; and it is quite true, as has been more than once observed in connexion with the subject, that if art were in a healthy and flourishing state among us, art congresses would be quite uncalled for and probably would never be thought of. In this country, unfortunately, the public indifference to all art except mere picture painting, and the want even of any perception of what it means, is so deplorably evidenced both in private life and in the utterances of the newspapers which best represent average public opinion, that some special effort is certainly needed to open the eyes of the English public and to rouse them from their state of torpor and indifference in regard to the artistic side of life. The annual Art Congress may in time do something towards this end, may succeed in arousing public attention and public enthusiasm for art in this country, though it will take a good many years first, more especially as the daily press of the country does nothing to help the movement, but rather everything to prejudice it, by insufficient and incorrect reporting, and often by apparently utterly wanton misrepresentation.

If essays on art are not art, there are at all events good and bad essays, and the Birmingham Congress has shown a remarkable predominance of the good. We do not know that much will be done for art by such papers as Mr. Brett's attacks upon all other painters, ancient and modern; and though there is no doubt a considerable amount of amusement to be got out of such a performance at the time, it will be better for the dignity of the Art Association if that kind of paper were suppressed for the future. But taken as a whole, the collection of papers read at the Birmingham Congress is really a very remarkable one; remarkable not only for the eloquence and the critical insight of many of them, but for the tone of moderation and practical common sense which pervaded nearly all of them. At the first Congress at Liverpool there was a certain proportion of papers in which "sentiment" of a very florid description was predominant. This element seems to have fortunately disappeared, and the proceedings of the Birmingham Congress, when fully published, will show that it is possible for artists who are enthusiastic in their calling to discuss it with judgment and logical reasoning.

This practical and commonsense element is nowhere better exhibited than in the address delivered by Mr. J. E. Hodgson as President of the Congress; and in this connexion we may heartily congratulate the Association on the fact that they have discarded the idea of having ornamental presidents, selected for the possession of a title or of social position or influence, and have selected an artist as the proper person to preside over an art congress: a principle which we are glad to hear is to be acted on for the future. No one could have filled the post more ably than Mr. Hodgson, whose address was a model of good sense expressed in a pointed and original manner. He deprecated any idea that the Art Association expected to alter men's ways of thinking, to change the face of society, or to bring about an art era equal to that of Pericles or Leo X. The object was to elicit public opinion, and to consider how to clear away obstacles from the path of the artist, and provide him with occupation worthy of his powers. "There is," he said "artistic talent enough in this country, and it is surely a useful thing for the community at large to meet together as we have done, and to consult together how that talent can be most profitably employed." Nor is Mr. Hodgson among those artists who regard the great practical works of the day with indifference or dislike. His remarks on this point are worth quotation, as coming from a painter :—

> "It is quite natural and excusable if we have failed in this matter [viz. : the rendering of work beautiful] when called upon to make things unknown in the world before, such as a locomotive engine and a Forth Bridge; and indeed it seems questionable to my mind how far such things can be made beautiful. There is an inexorable law in their constitution which compels them to go one way and no other. It was a tremendous problem in science to span the river Forth, and to suspend a roadway over it; and the form the bridge took was probably as necessary for the solution of that problem as the form of the Pons Asinorum of Euclid. I cannot, therefore, at all sympathise with those who anathematise that wonderful structure for its ugliness. The effect it produces on my mind is a sensation of immense power, of a splendid human triumph over materials, which gives me as much pleasure as does a sensation of beauty. It is narrow-minded and unworthy of our vaunted progress to ask for the same thing everywhere and in every place. A factory, with its straight brick walls, its hundred windows all alike, and its tall chimney belching forth volumes of black smoke, is an unsightly thing, no doubt; but the idea of which it is the visible embodiment is a great one, and thrills the imagination. It is ugly in itself, but it is a cause of beauty; it is helping to spread civilisation and comfort in far-away countries; its ugliness is a necessary evil that much good may come to humanity at large."

How far more wise and reasonable is this attitude of mind as compared with the prolonged shriek of indignation which Ruskin has uttered, in one form or another, against every production of the manufacturing and engineering work of the day. The object which we should keep before us now, in Mr. Hodgson's view, is the cultivation of the power of design. "A pennyworth of beauty often turns the scale;" but we cannot get the artists who will provide this beauty by any such system as the immense machinery of the Department of Science and Art. If five or six youths with a genius for design were to appear in the Art Schools of Birmingham, he considers they would be no better as far as Government encouragement was concerned. "Local masters are able to discern talent in their pupils, and though they may discern talent of a high order, and especially suited to the locality in which they are placed, under the present administration they have no means of encouraging it; that must be done by others than the heads of the department. This is no fault of any one's; it must be so as things are now administered. There is no other way, the scheme is too complex to admit of special deviations, no hitch must occur anywhere, lest the whole machinery be thrown out of gear. The only way we can bring our art schools in touch with our manufacturing industry is by decentralising. In all provincial schools should be taught the elements and principles of design, with special reference to local needs."

To understand the special bearing of this remark it should be observed that it had been arranged that this year the subject of Art Education, both for artists and the public, should be as far as possible the central idea of the Congress. This is the keynote of the admirable address by Mr. T. G. Jackson, as President of the Architecture Section, which we have printed in full in this week's and last week's issue, and of other papers in connexion with architectural training read by Mr. Aston Webb, Mr. Ralph Nevill, and Mr. R. T. Blomfield. The most important points in Mr. Jackson's address, as in opposition to the commonly received notions in regard to the architect's profession, are his caution against the use of drawing as an end in itself rather than a means, and the objection raised to the combination of the profession of architect and surveyor. In regard to drawing, it will be seen that Mr. Jackson does not deny the artistic interest of drawings of architecture made for the purpose of artistic effect, but he objects, and with reason, against the waste of time in elaborating elevations the real object of which should be only to represent the facts of the building so as to facilitate its correct execution. As far as this is concerned with what are called working drawings we are quite of the same mind. To proceed further in elaboration than is necessary for the execution of the building—to draw out in detail a number of windows, for instance, which are exactly similar, is abstracting valuable time which might be far better employed in some other manner; in giving more careful consideration, for instance, to the study of detail. We do not agree, however, in finding no artistic interest in a beautifully-drawn elevation. It does not show, certainly, what the building can ever look like in execution, but it shows what the building actually *is*, when compared with sufficient profile delineations in plan and section; and we confess to finding a great pleasure in the contemplation of the beautiful coloured elevations which the French architects, for instance, produce for the Commission des Monuments Historiques. A perspective view executed with the same accuracy and finish would not have the same value as a record of the building; it not only is capable of being cooked in various ways, but with the best intentions of accuracy it is likely to convey a more or less inaccurate impression. The coloured elevation conveys the colour and (when properly treated) the texture of the building, and places the facts as to size and proportion of parts with trustworthy correctness, because it can be checked by measurement, which cannot be done with a perspective view, except in a very general and comparative manner. This of course is a question of the illustration of architecture, not of drawings made for working purposes.

Again, in the illustration of modern works of architecture, we cannot but think that there is much to be said for the French system of exhibiting large geometrical elevations, with plans and sections, in exhibitions which include architecture, rather than the charming perspective pictures which many of our architects make for the Architectural Room at the Royal Academy. It is quite true that these elevations do not show the effect of the building, and that the pictures are much more interesting to the general public. But in a general exhibition architectural drawings such as these are quite on a different footing from the pictures properly so called; the architect in an exhibition does not, like the painter, show his work, but a representation of his work; and the geometrical drawings of the French are in reality a much more faithful representation of this work than the perspective drawing. The latter shows the work not so much as it is, but as the architect wishes the spectator to think it is; and it is a fact that many drawings in the Academy are so got up as to give to the building represented a picturesqueness and vivacity of effect of which the real building, if seen afterwards, will be found sometimes to be remarkably destitute. Imaginary effects of light and shadow, texture and colour, are got up to give apparent poetry and picturesqueness to a building which has little of these qualities in reality; in fact we have long been of opinion that a really artistic perspective draughtsman can make a pleasing picture out of almost any building. The French system of geometrical drawing for exhibitions, on the other hand, makes no pretence of bringing the architectural drawings into the same category as the pictorial portions of the exhibition; it is tacitly recognised that the exhibition of architectural drawings stands on a different footing from the other pictures. An architect has produced a building which has architectural merit; he cannot bring the building itself for exhibition, but he brings a set of drawings which, discreetly examined and studied, show exactly what it is that he has done, and enable the competent spectator to picture it in his mind's eye on the basis of a really accurate analysis in drawing, not on that of a possibly deceptive perspective sketch in water-colour. In France it would seem, from the large space given to such analytical drawings in the annual Salons, that the artists who are not architects, who are concerned in the selection of works, recognise this fact; in England it seems they do not. A suggestion in favour of more geometrical drawings in the Royal Academy Architectural Room was made by an architect in the discussion on Mr. Bidlake's paper on Architectural Drawing at the Art Congress, but a R.A. painter who was present repudiated the idea, and especially said that he would like to keep out all drawings which showed the mark of the ruler. This merely shows a misconception of the object of such architectural drawing, which is not to show a view of the building, but to show what the building is in the way in which analytical drawing can show it;* and we are still of the same mind, that there is too little of such drawing in the Royal Academy Architectural Room, and that the French collections of geometrical drawings are of more interest and of much more value to the student of architecture than mere pictures of the buildings.

Mr. Jackson's plain question "What can be more foreign to architecture than the valuation of building land, the letting of ground on building leases, the decision of questions of light and air," &c., will no doubt arouse wrath and contempt in the minds of many a respectable and successful "architect and surveyor" who is making a comfortable living out of the combined professions. But is it not the truth? Is there really any connexion between designing a fine building and estimating the market value of the land it stands upon? The fact is that "solicitor and surveyor," would seem a far more rational compound than "architect and surveyor," if we are to regard architecture as an art, and if we use the term "surveyor" in the wide sense in which it is now generally used, as indicating a man who is skilled in questions of the value of landed and house property, and of rights of light and "dilapidations." The art of surveying in the technical and strict sense, the art of geodesy, we do not hold to be in any way in opposition to the work of architecture proper; it is a very fascinating pursuit, in fact, and every architect, let him be as artistic as he pleases, should be able to use the theodolite and level: an art easily acquired with no great expenditure of time. But questions of the valuation of property, and of rights of light, really can only be adequately dealt with by those who have made a special study of them, and have long experience to add to that; they often concern the settlement of very large claims, and no wise man would entrust his interests in such matters except to a person specially skilled in them. Now, life being short, it must inevitably be the case that any "architect and surveyor" who possesses this special knowledge in such subjects cannot have given much of his time and intellect to the study of design; he has had no time for it, and the two kinds of study are in themselves almost incompatible. Hence, when this man of the dual profession is entrusted with a building to design, he simply falls back upon stock-in-trade commonplaces, and can produce no architecture worth the name. So emphatically is this the case that it would not be difficult to discriminate by mere style, in any given collection or street of buildings, those which had been designed by an architect and those which had been designed by an "architect and surveyor."

It may be a question, however, whether the ground taken in Mr. Blomfield's bright and enthusiastic paper, before referred to, that an architect should be above all a modeller, a sculptor, and that we can never have any fine architecture until that is the case, is not going too far in the other direction, and forgetting the basis of architectural art. This view received a probably unexpected caution and criticism in Mr. W. B. Richmond's address as President of the Painting Section, and which, coming at the close of the Congress, was made to a certain extent a summary of its whole tendencies. As coming from a painter this address was a surprise, an agreeable surprise, in several of its points, as indicating a breadth of view in regard to art generally which certainly does not always characterise the lucubrations of painters, who are somewhat apt to regard other branches of art as of little interest in comparison with their own. Mr. Richmond is not a painter of this type, and his remarks on architecture are admirably put, and are worth the serious consideration of architects. Taking the three necessities of architecture as put by Vitruvius,—"*Stabilitas, Utilitas, Venustas,*"—he draws attention to the significant order in which these three qualities are placed by Vitruvius, which he is disposed to accept as the right one. The following passage from the address is certainly very well put:—

> "In the whole range of the vast field of architecture there is, I think, nothing more striking than the unadorned simplicity of a Doric temple; even as we see them now, the temples in Greece, in Sicily, and elsewhere, without their sculpture, without their colour, how impressive are their proportions, and how purely are they examples of the master builder's art.
>
> It has been my good fortune to visit nearly all the Doric temples in Europe, and I confess to the growing belief that for pure architecture,—and by that I mean the art of *building* without adornment, delightfully and nobly,—those ancient temples must still be our guides. What other buildings would remain such complete works of art as these do, if robbed of all the sculptors, the painters, the carvers, the copper and silver smiths, the blacksmiths, and the carpenters' arts have enriched them with? Surely, then, the foundation of all architectural teaching should be of *structure* and *proportions*, ornament should be a very after consideration. Like music, architecture is a perfectly pure art,—purely abstract, purely creative. It is not till the sculptor wakens her with the sound of his chisel and mallet, and the painter touches her with colour, reminding us, by their playful and fanciful rendering, of the adornment of nature's hands upon her stones, that architecture begins her close relationship to her sister arts. Till then she stands by herself, like the bare mountains, unadorned by man.
>
> Yet this, her special gift, her unadorned simplicity, and complete individual majesty, is too often forgotten. Too often do we mar her beauty by the vestments with which we clothe her natural simplicity. Division of their labours is therefore necessary to the architects; they should leave to the sculptors and to the painters those adornments which they know more about than do the architects."

This is a good counterblast (though not so intended) to the view of architecture often taken by sculptors, who will cite these very buildings and say "What is a Greek temple with the sculpture removed?" A foolish kind of criticism which Ruskin started. But it is perhaps as well for the too enthusiastic architect to be reminded that to excel in three arts is not given to every one, and that after all it is possible to "build nobly" (the real end of architecture) without being a painter and sculptor at the same time; though we quite agree that if an architect has had the time and the talent to acquire the power of modelling his own carved ornament, he will be able to give far more artistic unity and life to his building. But to say that there can be no refined and interesting architecture without this is going a little further than the truth will bear.

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* Such drawings cannot be accurately made without a ruler, any more than a wall can be accurately built without a plumb-line.

Mr. Ralph Nevill's paper on the "importance of the Field Study of Architecture," the title of which did not exactly convey its meaning, was a very well-urged plea for the advantage of getting students of local art schools to study and sketch local architecture as represented in picturesque old buildings, not necessarily large or important, in the locality; old farm-houses and other buildings which have quietly picturesque beauty and something of a vernacular style, a style of the district. Mr. Nevill's main object in suggesting this was to infuse some feeling for architectural detail, of a simple and unobtrusive kind, into the mind and taste of the kind of men who might become builders, builders' foremen, or clerks of works; to foster in them such a refinement of taste and such a perception of local style that they could be trusted to assist in working it out for themselves in taking their own part in the erection of a building. To get at established builders, Mr. Nevill admits, is probably hopeless, but it may be possible to get at the builders' sons or destined successors. This is an excellent idea, to provide a class of men engaged in working on buildings, who should be not merely blindly doing what was put before them in detail drawings, but sympathising with the spirit in which the work was to be carried out, and bringing their own taste to bear on the execution of the work. It would make a difference often in the final effect of a building if there were this sympathy and understanding on the part of the workmen engaged on it; but what is perhaps of even more importance, it would raise their work from a dry and dull task to an occupation of interest. It is to be hoped this suggestion will not be lost sight of by the masters of local art schools.

The subject of architectural education was touched on from another side in the paper by Mr. Aston Webb, on the Education of Architects, which the author was unfortunately prevented by illness from reading himself, but which was read for him. This was a paper in favour of the examination scheme of the Institute of Architects, but which Mr. Webb desired to see united with the teaching of the Royal Academy Schools. Mr. Jackson has taken to task the Institute for not being an educating body, and says very truly that examination is not education, and we quite concur with him in desiring that young architects should not be led into thinking that the great object of their study was to pass a brilliant examination. At the same time, as we have said before, we do not see how the Institute can become a teaching body without its entire reconstitution; it was not created with that object, and has no means or machinery for it. As to its examination, we consider that an excellent institution, as a preventive measure, but not further than that. It provides an assurance that everyone who has passed it has a certain definite amount of practical and scientific knowledge, that amount without which he ought not on practical grounds to be entrusted with buildings; but it should be recognised that this is not to be understood as "hall-marking" him as a superior architect, only as a man who has given proof of possessing adequate practical knowledge. The examination is distinctly likely to raise the status of those who enter the Institute ranks, and to keep unfit men out; but it can only have a negative object; the qualities which render a man really a great architect can never be tested by examination. The public must find them out as it finds out eminent sculptors or painters.

Mr. Mackmurdo's address as President of the Applied Art section was supplemented, in a most piquant and practical manner, by the production of some examples of Birmingham wares made for exportation to various parts of the world where there was a half-civilised coloured population, in contrast with the more costly and gewgaw articles made for home consumption. Mr. Mackmurdo produced two copper jugs of simple design and in perfectly good taste, which he found getting made in the back rooms of an establishment the show-room of which was filled with things that no artist would endure. He was told he could not buy these except wholesale, they were for exportation for negroes and were not for sale in Birmingham, as not being good enough for the reputation of the firm! There could hardly be a better lesson on the point that ornament is not necessarily art. Here was a firm making really artistic objects in its back work-rooms which the owners were ashamed of showing, and which they sent abroad as just good enough for negroes, while they offered bad ornament to their local customers.

In connexion with this section of the Congress a visit to some of the Birmingham manufacturers engaged more expecially in works of art was organised on the part of some of the members specially interested in applied art; but time only allowed of two or three large firms being visited, where the members were very cordially received. One of these was a large goldsmith and jewellery establishment where there was an evident desire to have any hints that the visitors could offer, and where some designs made in the house were shown (on paper) which were above the average of such design as turned out from commercial establishments. There was more of hand work and less of machine work than was expected, but the party were told that the firm in question was exceptional in this respect. It was a somewhat sad sight, however, to observe the wholesale manufacture going on of a couple of designs for brooches, the shape of which exactly suggested a finger-plate for a door on a small scale, and suggested nothing else. The work was being carefully and conscientiously done, but what a pity that the workers had not something more beautiful to exercise their craft on. The mere issue of things by the gross on the same pattern takes away all sense of Art, more especially when one goes behind the scenes and sees the process going on: still, as Mr. Richmond had the courage to say in his address, we perhaps cannot do altogether without machine-produced ornament for some purposes; the point is to endeavour to get something good to produce. It is impossible to suppose that anyone could have had any interest or enjoyment in producing these "finger-plate" brooches.

A few other papers we can only mention incidentally. Mr. Simonds's address as President of the Sculpture section was a very well-written one and very well delivered, but adopted again the exaggerated view of the necessary relation between sculpture and architecture. It is quite a mistake to urge that sculpture necessarily loses half its effect apart from architecture; the highest works of sculpture not only can afford to stand alone, but would even lose some of their complete and all-round character if compelled to form part of a building. It is the architecture which inevitably gains by the alliance; the sculpture must almost of necessity lose something by being conventionalised into harmony with the architecture, though it gains in another sense no doubt. In short, there is no absolute principle in the matter: bas-relief, of course, is necessarily in connexion with architecture; but group sculpture in the round is not, and the sculptor would often be hampered in his conception and design by being compelled to adapt his group to a special position on a building. It is surprising that sculptors themselves (or some of them) cannot see this.

Mr. Mullins's paper on "Sculpture as applied to Internal Decoration" dealt of course entirely with sculpture in the bas-relief form, or as applied to objects of furniture &c., and was a very good plea for decorative use of the figure in this manner. Mr. Selwyn Image, in speaking of "Colour in relation to internal decoration," was strictly practical in tone, and gave some very valuable hints as to the means of procuring good colour effect in interiors without extravagant expenditure. An exceedingly sensible and practical paper was that read by Mr. F. G. Jackson on "Art Education in Relation to the Industries," the main point of which was that considering the short time many of our art students remain in the schools, it was important that a system of drawing should be adopted which would give the eye and hand as much training as possible in the allotted time; and to this end he recommended greater attention to drawing with the brush. The following passage from his paper is worth quoting:—

> "Having had a lengthened experience of the (South Kensington) system, both as a student and teacher, and an intimate acquaintance with some of the important manufactures of the district, I may be allowed to speak as to its working and its direct bearing upon the industries, and point out what appear to be practical defects. First, then, one conclusion has been forced upon me, that there is throughout a too great insistance upon rigid outline drawing. Outline drawing, or, as it is technically called, freehand drawing, was no doubt instituted as a protest against the slipshod drawing prevailing before the system was promulgated, and to encourage accuracy and care; so far, it served its purpose. The practice of outline is an essential part of a pupil's training, but the manner in which it is taught, and the extent to which it is carried on, may hinder his progress. The so-called freehand drawing, as pursued in schools generally, might be more appropriately called stiffhand drawing, as the method of teaching engenders anything but the free use of the pencil, leading rather to timid, laboured, and inexpressive outline. The attention is directed towards the production of mechanically finished outline to the neglect of the realisation of the form the outline is intended to define. This undue attention to line, resulting in the neglect of form in the preliminary stages, is more painfully noticeable in subsequent ones, such as outline from the cast and from plants. The timid, halting, and laboured attempts one sees from time to time in these exercises causes one to think that there is something wrong in our methods, and this I believe to be the case. Drawing is not generally taught in a sufficiently direct way, and the practice is limited to the use of a hard point alone. As regards the first, I think if drawing was taught more after the manner that writing is, distinct advantages would result; probably the early exercises would be as bad as those of first copy-books, and would not be so presentable as the first laboured drawings under the existing method; but that would be of no consequence so long as we have in view, as we ought to have, the development of executive power as a means of expressing form, rather than the making of drawings. Power is to be obtained by repeated well-directed efforts rather than by laboured attempts to get perfection in a few."

This is just the same complaint, essentially, that we and others have before made against the system of learning to draw the figure by stippling shadows on one drawing for weeks, instead of making a number of less highly finished studies from different positions.

Mr. Heywood Sumner's paper on "Advertisement as a field for design" was an admirable one, but the artistic element in advertisements can only be introduced by the cultivation of public opinion, which probably will slowly work a change in this respect. If an advertisement is offensive to public morals it can be dealt with by the law, as we have recently had occasion to know; but it is impossible to apply any law against ugly advertisements, because it is impossible to draw any defined line between the ugly and the not-ugly. Public opinion must do it, and every one interested in the subject should take every reasonable means to awaken and stimulate public opinion to put down this mass of staring vulgarities which overruns our streets on all sides, and perpetually accustoms the eyes of the multitude to the contemplation of ugliness and vulgarity. Taxing advertisements according to area, which was suggested, might have some influence in at all events reducing the nuisance within narrower limits.

Among papers of a more philosophic and general turn may be named Mr. Hodgson's charming lecture to working men on "Open Sesame; or, how to unlock the Treasure House;" a lecture of advice as to the best way of cultivating the mind by such reading as the daily labour leaves time for, and which is remarkable not only for its sound sense but for the kindness and sympathy which runs through it. And last we must mention the remarkable paper by Mr. Holiday on "The Figure in Design," which turned out to be not, as was expected, a lecture on designing the figure, but on the mental reasons why the figure is the highest and most expressive thing in art. The aim was to give a reason, on the basis of Evolution, for the mysterious effect of beauty produced on us by nature, as the environment with which we had been harmonised, and by the figure as nature's climax. "The delight which every true artist and every lover of art must feel in the beauty of the human form, is precisely similar in its origin to that aroused by the sky and the water, the mountains and trees, both being derived from the harmonies exhibited in the things contemplated, and the harmony between them and our own nature; but though similar in origin, it is far more intense in degree, objectively because of the greater perfection and subtlety of its harmonies, subjectively because of its more intimate relation with our spiritual faculties." This gives the outline of the main idea of the paper, which was very fully and eloquently worked out. We do not remember before to have met with any such distinct attempt to give a reason, founded on the nature of things, for the supremacy of the figure as a mode of artistic expression, though of course it has been tacitly accepted as such for generations. It may be said that such a paper has no practical influence on art, but it may have, if read and understood, a very practical influence on public comprehension of art; at all events it was a most eloquent and thoughtful paper, and was listened to with almost breathless attention by a delighted audience.

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NOTES.

WE entirely concur in the opinion already expressed in the *Times*, that the dreadful railway accident (?) at Norton Fitzwarren is morally chargeable upon the railway company who apparently sanction the arrangement of shunting goods trains at a place where there are no sidings, and leaving a heavy goods train waiting on the main line. As far as can be at present understood, the signalman in charge was an exceptionally good and steady man who had been on the line over thirty years. He appears to have forgotten the waiting goods train at the moment, and though it seems an extraordinary piece of forgetfulness, it has to be remembered that the human brain is not an automatic machine, and it is impossible that it can always be counted upon to act as one. The essential fault is that any train intended for the down road should have been shunted on to the up road and left to stand there at a time when a fast train was nearly due. Such a proceeding is, in view of the fearful risk that is run, little short of criminal; but unfortunately criminality cannot be brought home to companies in any adequate or practical manner.

WE observe that Dr. Orme Dudfield's last monthly report on the sanitary condition of Kensington entirely confirms the opinion we had already expressed in regard to the recent sensational correspondence about smells in London, that these smells were the result of brick-making works at Hammersmith, and not of defects in drainage and sewer ventilation. All the reasonable evidence pointed in that direction, and it is satisfactory to find it confirmed on such reliable authority. Dr. Dudfield had long recommended that brick-burning nuisance should be the subject of legislation, either special or under existing Acts dealing with noxious trades, and he draws attention to and quotes the by-laws which have recently been recommended by the County Council, and now wait the sanction of the Local Government Board, for controlling this nuisance. Dr. Dudfield adds the following practical comment on the situation:—

> "Should the by-laws be confirmed by the Local Government Board, it will be interesting to note the result. Of course, nothing can come of them, should the Sanitary Authorities of the districts where brickmaking is carried on neglect to put them into force; unless, indeed, the Council, or private individuals subjected to annoyance, should take the matter into their own hands. To us, locally, the by-laws will not, probably, give entire relief, as there can be no doubt that the stinks arise, in part, in the western district outside the Metropolitan area, *e.g.*, at Acton, to which the by-laws would be inapplicable. But as regards brick-burning in Hammersmith, I should not be surprised if it were brought to an end, at any rate, so far as the "clamp" system is concerned; for it would appear impossible that brick-burning can be carried on under that system, without generating 'noxious effluvia,' that must 'escape' into the external atmosphere,' it being impossible, moreover, to prevent the production of such effluvia when dust-bin refuse is used in the making or in the burning of bricks, and alike impossible that such effluvia should be 'effectually arrested or destroyed,' as required by the by-laws."

THE great scheme of "General" Booth, which has aroused so much enthusiasm, is no new idea, and like many other schemes for benefiting the homes and condition of the poorer classes, will be found to have been suggested years before in our columns. In 1871, the then Editor of this journal was commissioned by a wealthy man, whose name was not divulged, to invite suggestions for the best manner of expending half a million of money for the public good, while avoiding pauperisation. The announcement brought a number of suggestions, the best and most reasonable of which were published in the *Builder* for April 15, April 22, and May 6, 1871. Among these is a short statement of a scheme, (May 6, p. 341) under the signature "R. P." which is substantially the same as that now being offered for public consideration. It runs as follows:

> "*Home Colonisation.*
>
> This can be done by purchasing a portion of the common lands of England, and forming a colony, where men who have been reduced through want of employment could be sent to reclaim the land and renew their strength. On each ten or twenty acres of land could be built a small homestead. In the erection of these the skilled labour could be employed; and when the whole was reclaimed and made productive it should be let or sold, and more land purchased with the proceeds.
>
> In connexion with this colony should be a city colony, for the reception of all men willing to work, but so reduced in circumstances that their appearance and strength prevent their obtaining work. These should be drafted to the country colony as required, and when their health was recruited sent back. Donations might be invited from the general public, for loans to the wives and children, if any, to support them during the absence of the husbands; but in all cases the husband should be sent away to recruit his strength.
>
> This is the outline of the scheme for improving the country and the people, and it could be extended so as to embrace the rebuilding of the worst parts of large cities by judicious purchases and by working parties or pioneers from the country colony."

THE attention of all tradesmen who are in the habit of using dangerously inflammable substances in their daily occupation ought to be called to the coroner's jury verdict on the recent fire at Messrs. Rowley & Brock's establishment in the City. The jury found that the fire was caused by accident, but that "the employers were deserving of severe censure for the dangerous manner in which their business was conducted." This verdict has been clenched, so to speak, by a summons against the employers, under the authority of the London County Council, for keeping petroleum on the premises without a licence, and Messrs. Rowley & Brock have been fined 20*l.*; which it is hoped will be a caution to others not to evade the law in regard to dangerous substances of this class.

WE hear that the German Government intends bringing before the public a valuable publication under the title "Olympia: Results of the Excavations made under superintendence, &c., of the German Empire," and that the task of compiling this work has been given to Professors Ernst Curtius and F. Adler. The first two parts, "History of the Excavations," and "History of Olympia," will be from the pen of Herr Curtius; Herr Adler will work out the part describing the destruction and loss of the remains found; and will at the same time, together with his son-in-law Dr. Dörpfeld, and others, compile the descriptions of the architectural parts discovered; whilst the description of the sculpture will be taken in hand by Herr Georg Treu, and the bronzes will be described by Herr Furtwängler. The publishers of these official volumes, which are to be well illustrated, and will have a good supply of maps attached, will be Asher & Co., Berlin. The price is stated at 1,200 marks (or nearly 60*l.*). The part treating of the bronzes will be the first put into print.

A CORRESPONDENT in Birmingham draws our attention to what we had already noticed, that we were in error in ascribing to the Birmingham Town Hall the true architectural treatment which its exterior suggests viz.: a basement story of offices with a *piano nobile* above. It is many years since we were inside the Hall, and we could hardly have credited that such an architectural solecism had really been committed there as to design a Classic temple with an immense projecting rusticated podium, and then scoop out nearly the whole interior as a great hall, entirely irrespective of the strongly-marked division of the exterior design. The correction is a melancholy one to make, for it robs the Birmingham Town Hall of most of its architectural value. As a public hall decorated with an exterior order, and placed on a podium containing inferior rooms, it would have been a rather grand architectural conception; as it is, the exterior is nothing but a piece of deceptive scenery. St. George's Hall at Liverpool gives the true treatment for a Classic building of this type. That has also a lofty podium, with a grand flight of steps on two sides, and the upper step, on which the colonnade rests, represents the level of the floor of the great hall (all except the necessary entrance-step at the doorways) as it should do, while the Birmingham building is merely a stately-looking sham.

IN connexion with the publication a fortnight ago (p. 348, *ante*) in our correspondence column of a translation of the "Prussian Standard Rules for the Uniform Delivery and Testing of Portland Cements," it may be well to mention that a gathering of gentlemen interested specially in the uniform testing of building materials took place at Berlin last September, by request of Professor de Bauschinger, and that among the sixty persons present at this gathering, Austria and Switzerland were well represented, also Russia and France, with a delegate each in form of a Government official sent over for the occasion. The purpose of the gathering was to further the idea of uniform testing on the Continent, and the publication of the results of scientific and practical research referring to this subject. A unanimous decision was passed advising the formation of a proper society, with regular meetings and a fixed programme of work, as a mode of giving the movement a firmer basis, and after due consideration of the time required to make some decisive progress in the solution of the different problems now on hand, 1892 was chosen as the year for the holding of the next, or, rather, first official meeting of the newly-formed society, Vienna being selected as the locality for this gathering, in lieu of Zurich, first proposed. The results obtained at the discussions of this year's meeting are to be published as soon as possible, time, however, having to be allowed for the careful wording of the decisions come to. It may be of interest to mention that the "testing of Portland cements" subject took up a greater part of the time devoted to the discussions, and that the subjects specially treated here were in regard to (1) quicker modes of testing, (2) use of steel-plate sieves in comparison with ordinary fine wire-sieves for the sand, and (3) the proper quality of the sand to be used in connexion with the cement-testing, and last, not least (4), the times of setting of trial cakes as well as the most practical form of these cakes for the tensile and compressive, as well as for the cohesive trials.

THE current volume of the "Minutes of Proceedings of the Institution of Civil Engineers"* contains an interesting communication by Mr. L. J. Le Conte, on the "Contamination of Waters in Storage-Reservoirs on the Pacific Coast." He particularly notices the water-supply of San Francisco and Oakland as cases in point. The supply of the former city is derived from three large artificial storage-reservoirs, located in the coast range of mountains, and having a united area of water-surface of 1,140 acres; whilst that supplied to Oakland is obtained from storage-reservoirs having a united area of upwards of 410 acres. The seasons are so dry along this coast that, ordinarily, nearly half the year, and sometimes the whole year, passes without producing any water for storage purposes; and it has happened that no surface-waters have entered the reservoirs during an interval of 600 days. These periods of drought, occurring usually in summer time, cause a certain amount of stagnation in the water; offensive vegetable matter puts in an appearance, carbonic acid and light carburetted hydrogen gases bubble up from the bottom, and the quality of the water in consequence becomes much deteriorated. This goes on from bad to worse, until the rainfall commences, and the reservoirs are replenished. Owing to the different modes of treatment (which are briefly described) after leaving the storage reservoirs, the water supplied to San Francisco is of better quality than that supplied to the other city, where decomposition largely takes place, even in the supply-pipes. The author concludes that the primary cause of the deterioration is the putrefaction of the mud (which averages 10 ft. in depth) deposited by subsidence on the floors of the storage-reservoirs alluded to, and as a remedial measure he suggests that this mud be removed from time to time. Under the circumstances, however, we question whether such a common-sense recommendation will have much effect. Surely it must be useless to preach the doctrine of purification to those who are so far lost, or ignorant of the general principles of water-supply, as to permit the accumulation of such filth in the reservoirs for "many years," and who have for that period wittingly allowed the service-pipes to become receptacles of such an amount of putrefactive matter that when delivered to the consumer the water "is always very much worse than that of the surface-water in the reservoirs whence it comes." Not only should the filth be cleared out, but those also who are responsible for its accumulation.

WE have received from Mr. J. D. F. Andrews a copy of his "Rules for the Concentric Wiring of Buildings and Ships." An introductory leaflet asserts "that it has been found that it [the electric light] has intense heat, and that it has generated many serious fires. . . . . It does not effect disasters . . . . by spontaneous ignitions and explosions, for it requires no air; but it generates hidden fires where the wires are buried." This is rather startling, as it has been stated over and over again, by those who are supposed to be high and disinterested authorities, that no electrical fires have ever occurred where the rules adopted by the leading insurance offices have been followed. It is, however, consoling to learn that "by the system of concentric wiring as devised and patented by Mr. J. D. F. Andrews, these dangerous properties have been entirely set aside by a mode of construction, and the simplicity and substantial and durable character of electric lighting greatly enhanced." Many of the rules laid down apply equally to all systems of wiring, and are, indeed, essentially those adopted by all competent contractors; but when the author suggests regulations that can only be fulfilled by concentric wires, he does not fail to point out that "a method . . . in concentric wiring in accordance with the above rules has been patented by J. D. F. Andrews." Concentric wires are not new, and for certain purposes they are unquestionably useful, but we wish Mr. Andrews had not felt it necessary, in pushing his wares, to call to his aid the now almost-forgotten terror, among the uninitiated, of the hidden dangers of electricity. Probably the science of no branch of engineering is so thoroughly understood as that of electricity. If an installation goes wrong, it does so on account of bad material and bad workmanship, or from such accidents as cause the explosion of gas or the bursting of a steam boiler,—not because of the absence of concentric wires.

IN the *Deutsche Bauzeitung* we find some interesting figures regarding the amount spent in Prussia during the last ten financial years for matters concerning directly or indirectly the improvement of natural intercourses and formation of new waterways. It appears that since 1880, 61,152,000 marks have been spent in improvement of the larger and smaller navigable rivers of the country; 74,812,000 for supervision and maintenance of works on these rivers; 47,142,000 for the improvement of the non-navigable parts; indirect expenses, including the erection of bridges. These various expenses make an agregate of about nine millions. To this sum must be added another 9,000,000*l.* for construction of new waterways and works pertaining thereto (the works on the Dortmund-Ems Canal and the North Sea-Baltic Canal having cost some 59,800,000 and 50,000,000 marks respectively during the above period). A total of 18,000,000*l.* in a decade certainly shows to what an extent the waterway question interests the authorities abroad, and that a good inland connexion by water is considered to be of importance.

THE *Athenæum* states that a committee, with Lord Melville and Professor David Masson (the poet's biographer) as chairman and vice-chairman, has been formed for erecting a suitable memorial over the grave of William Drummond of Hawthornden, in Lasswade churchyard. The church stands on an eminence about 2½ miles distant from Hawthornden. The existing church was built *circa* 1775; the site of the former is marked by an enclosure in the graveyard. What is known as "Drummond's aisle" is still preserved; and is thus described by the Professor in his Life of Drummond (1873):—

> "A small arched space of stonework, with a roofing of strong stone slabs, and a grating of iron for doorway. Within that small arched space Drummond's ashes certainly lie, though there is no inscription to mark the precise spot as distinguished from the graves of some of his latest descendants who are also buried there. . . . . The small arched aisle itself is his monument, and it is a sufficient one."

In this same enclosure is the tomb of Henry Dundas, created Viscount Melville December 24, 1802, Lord-Advocate of Scotland, and subsequently Treasurer of the Navy. His first wife was daughter to David Rennie, of Melville Castle, hard by. Hawthornden, where are the celebrated caves, reputedly of Pictish origin, in the rock above the North Esk, belonged in 1338 to the Abernethys, who sold the property to the house of Douglas, of whom it was bought by Sir John Drummond, of Carnock, descendant of William, brother to Annabella Drummond, Queen of Robert III. It subsequently passed by marriage to Sir John Forbes, Bart. (died 1829), and went to his son-in-law, Mr. Francis Walker, who assumed the name and coat-arms of Drummond, and became second baronet. At the Stuart Exhibition was shown the table, from Hawthornden, carved with the Scots lion, and the initials R. S. and A. D., which belonged to Queen Annabella, and which Ben Jonson probably saw on his memorable visit to the poet. At Lasswade, Sir Walter Scott passed, 1798-1804, what—had he but known it—were the happiest years of his life, and in the cottage garden there he cultivated a taste for planning and planting which afterwards contributed to disaster. The phaeton he used at Lasswade was the first to be driven in Liddesdale.

WE lately adverted* to the fall of John Lombe's silk-mill on the Derwent at Derby. We read in the *Standard* that the equally famous mills at Cromford, near Matlock, by the same river, were destroyed by fire on the evening of Friday, 6th inst. These mills were founded by Sir Richard Arkwright in 1771, and are the first of their kind that were worked by water-power. They were built of gritstone quarried in the township. In 1769 Arkwright took out a patent "for spinning by rollers," and set up a small mill at Nottingham, horses being used for supplying the motive power. But finding the employment of horses too costly, Arkwright,—with the help of Messrs. Strutt, of Derby, and Need, of Nottingham,—removed to Cromford, or Crumbeforde, being attracted thither on finding he could use a stream which, flowing from the mines on the moor, was not liable to be frozen in winter time. This is the mill which is described by Darwin, with some ingenuity in view of so prosaic a theme, in his "Botanic Garden." Arkwright bought Cromford manor in 1789, and, having done much to promote the prosperity of the locality, died at Rock House in 1792. His son completed and endowed the St. Mary's Chapel which he had founded there. It was restored by the late Mr. Peter Arkwright thirty years ago. It is stated that the damage is estimated at 35,000*l.*, and that the mills, owned by Mr. F. C. Arkwright, of Wellesley Castle, were tenanted by Messrs. Hollins & Co., of Nottingham, merino spinners. Richard Arkwright was knighted, not for his inventive genius, or for his benefits to the world, but for having presented a local address to the King on his escaping Margaret Nicholson's attack.

THE parsimony of Government Departments frequently mars both the beauty and the utility of our public buildings. Here is an instance in which, for the sake of saving a comparatively small sum, the utility of the Law Courts has been diminished. The west and east wings are occupied by various legal departments, which have to be visited daily by large numbers of solicitors and clerks, to whom the saving of time is important. But the several stages of these lofty wings have to be reached by climbing up long flights of stairs. In any building in London owned by a company or by private persons, of such a size as the wings of the Law Courts, there would long ago have been lifts. As it is, not only are business men delayed and inconvenienced, but in some instances there is injury to health through the constant ascent of the stairs in question. Moreover, various attendants are in waiting about the staircases, so that the cost of working the lifts would not be additional. It is high time, indeed, that some pressure were put upon the Board of Works to motion the Treasury to sanction the placing of lifts in the Law Courts.

THE Arts and Crafts Association invited the Institute of Architects to visit the Exhibition at the New Gallery on Tuesday evening. The east gallery was partly cleared as a reception-room and seats and a small platform placed in it, and Mr. Walter Crane presided while some speeches were made by Mr. Waterhouse and Mr. W. Morris, and a paper on the Arts and Crafts Exhibition, dealing with the relation of the crafts to architecture and pointing out the merits of some of the best exhibits, was read by Mr. Sedding. The speechmaking and reading was rather longer than necessary, especially considering that the noise made by the movement and conversation of visitors passing to and fro in the hall rendered it difficult to hear; and though Mr. Sedding no doubt felt, as he said in his paper, that the architects were "very much at home" in the Arts and Crafts Exhibition (as they certainly ought to have been), as a matter of fact the invitation appeared to have received very scant response, nor did we notice more than about half-a-dozen well-known members of the Institute among those present. This is a pity, and it is not creditable to the architects that they should be so indifferent to an invitation of this kind; it looks as if their interest in the artistic craftsmanship was rather lukewarm; which is not at all as it should be.

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* Vol. cii. (1890), p. 370.

* See "Note" in the *Builder*, September 9, 1890.

THE exhibition of the works of David Cox at Birmingham, before referred to, formed the principal attraction at the Mayor's reception in connexion with the Art Congress, given at the Council House on the 5th, the Art Gallery Rooms being placed *en suite* with the Council House reception-rooms. A detailed examination of the collection in its completed form was calculated to further raise one's estimation both of the full and representative character of the collection, and of the genius of David Cox. The collection brought out in a remarkable manner the variety of his work, which is such in fact that it would not have been difficult to believe the pictures to have been the work of several different artists. Some there were, no doubt, which were rather like large blotted-in sketches or studies than pictures, and probably this was the light in which the author regarded them. A remarkable feature in the collection was formed by the oil-paintings, which, though a small portion of the whole collection, was much more numerous than might have been expected, and probably included nearly all the oil-paintings which Cox executed. They are not equal to his water-colours, but include some very fine works, well worth seeing. The exhibition at the galleries of the Royal Society of Artists in New-street, was another artistic attraction of the week, and contained some very good pictures, more or less known already, among which it was interesting to meet again one of the most beautifully-finished paintings which Sir F. Leighton ever produced, exhibited a good many years ago at the Royal Academy under the title of "The Juggler,"—a girl standing in front of a light-coloured curtain and throwing balls in the air, the face turned up and seen foreshortened, a remarkable piece of drawing. But the best of all the entertainments connected with the Congress was unquestionably the Reception given by the Local Committee on the 7th at the Edgbaston rooms. The entertainment included a well-known comedietta, acted by two amateurs, and an admirable performance of classical music by a small but efficient band, including the whole of Beethoven's First Symphony (the only one which lends itself to performance by a small band), which was much appreciated. The Local Committee deserve every credit for giving a really artistic turn to an entertainment on such an occasion, instead of leaving it a mere promenade.

STREET IMPROVEMENTS AT BELFAST.—At a special meeting of the Belfast Corporation on the 11th inst., it was agreed to petition the Local Government Board for a provisional order for street improvements at a cost of over 100,000*l*.

A NOTE FROM ITALY.

A CORRESPONDENT sends us the following notes in regard to the ancient Christian house recently discovered in Rome:—

"In 1887 and 1888 excavations were carried on at Rome, on the Cœlian Hill, under the basilica of St. Giovanni e Paolo, resulting in some of the most notable discoveries ever made in the field of Christian archæology. The present discovery is that of a house which must have been one of the most magnificent of ancient Rome. Instead of the usual decorative frescoes, well known from the examples in Pompeii and Rome itself, the walls are covered with cycles of symbolic Christian paintings, used for the decoration of the walls and ceilings of the rooms in which lived SS. John and Paul, martyrs, under Julian the Apostate. In fact, this is the first known example of a Christian palace in Classic Rome. The entire ground-floor, containing more than fifteen rooms, is still in a good state of preservation.

The works began under the High Altar of the modern church, and two rooms were found, with the walls and the ceiling decorated with frescoes in a style of art of the decadence of the second half of the fourth century A.D. The decoration is composed of simple squares, with architectural ornaments and leaves, with fish and birds.

Continuing the excavations under the principal aisle of the church, the *tablinum* has been discovered, which measures nearly 7·00 × 4·50. Near the *tablinum* is found another room of lesser proportions, with frescoes.

Here, however, is to be seen, in an angle, the figure of a woman *praying*, of the same type as those found in the Christian cemetery catacombs. On another wall is painted the scene of Moses taking off his shoes before he ascended the Mount, as is seen in the frescoes of the Roman catacombs. The same Moses, probably in the act of striking the rock, is represented in another part of the wall, but this subject is indistinct, the painting being much damaged. On a wall constructed in a period subsequent to the *tablinum*, and near this, are found some frescoes representing historical scenes, which, according to the judgment of the well-known archæologist, Com. G. B. De Rossi, refer to the Acts and Passion of the Christian Martyrs, and certainly allude to the martyrdom of Saints John and Paul, of whom it is narrated in ancient documents and ecclesiastical records, that they were killed, and secretly buried, by the order of Julian the Apostate, in their own dwelling, over which was subsequently erected the church. In fact, in the wall before mentioned opens a little window (*fenestella confessionis*) through which pilgrims looked down on the tomb of the martyrs. At the sides of the window are painted the images of the Apostles Peter and Paul, and beneath them a figure praying, at the feet of whom are prostrated, in supplicating attitude, a man and a woman.

The Commendatore De Rossi thinks that this scene represents one of the two martyrs before-mentioned, venerated by Pammachius and his wife, Faustina, who effected the transformation of the house into a Christian Basilica. On both sides of the wall are painted groups of figures which seem real and historical, among which is to be noticed a scene of martyrdom; two men and a woman kneeling, with their hands tied behind their backs, and who are about to receive a mortal blow from the Lictors. The style of the paintings is of the end of the fourth century. The researches of 1887 were continued by Padre Germano, and several other rooms were found destined for different domestic uses. The edifice communicated with the public way by means of a vestibule which about the XI. A.D. century was made into an oratory and decorated with various paintings. The most important is a group in which is represented the Saviour, with a richly-gemmed vestment, holding in his left hand a volume on which is written: "Lux ego sum mundi; nutu qui cuncta creavi." On each side of the Saviour are the archangels, Michael and Gabriel. Near is the figure of St. Paul, dressed in the costume of the Byzantine court. Under the apse of the Church have been discovered two rooms, one of which is adorned with good paintings on the ceiling, representing scenes of vintage and various birds. On the walls are painted twelve winged genii, with simple mantle thrown over the shoulders, and sustained by the arms. A series of large festoons and flying birds decorate the intermediate spaces. These paintings reveal a still flourishing state of art, and may be attributed to the epoch of the last Antonines.

In that part of the house destined to the use of baths have been discovered pipes for water and for hot air. The central hall of the baths is square, covered with an arched ceiling, and well cemented; on the wall facing the entrance there is the apse of the laconicum, as wide as the basin for the bath, formed of bricks, and covered with strong cement. Traces of fire are to be seen under the pavement of the central hall (calidarium); a chimney opening blackened by smoke, and tubes of terra-cotta for the transmission of the heat indicate that the pavement was that of the hypocaust.

In the excavations were found many amphoræ, and little lamps of terra-cotta, and fragments of decoration in marble. One amphora, for wine, had painted on the surface, in red colour, some letters and numbers, with the XP monogram between A and Ω." L. B.

ST. MARY'S (ISLINGTON) PUBLIC BATHS COMPETITION.

THE three premiated designs in this competition have been on view for the last few days at the Vestry-hall, and we have been invited to see them, and by implication we may presume to express an opinion on them. But before availing ourselves of this opportunity we must express our disapprobation of the system, which has been followed occasionally in other Vestry competitions, of allowing only the premiated designs to be open to public criticism, and returning the others to their authors without any opportunity of public exhibition. The result of this is, in the first place, that the advantage to the architects and the ratepayers of a public criticism of the whole of the designs submitted, and the guarantee which such publicity affords of fair dealing on all sides, is practically nullified. The public and the architects want to know, not only what are the merits of the premiated designs, but what are the merits of the whole number from which they are selected. In the second place, an architect who has produced a design of merit, but which has, from whatever reason, been unsuccessful, loses also the small advantage which he might otherwise have in a public recognition of the merits of his design. This is a minor matter, however; the important point is that if there is any value in public criticism of competition designs, it should be exercised on the whole of the designs from which the choice has been made, and not on the selected ones only.

Furthermore, the difficulties of criticising even the three premiated designs have been increased by allowing the selected design to be amended and altered to suit the wishes of the Commissioners; this is quite right, as far as it goes, but it would have been better to have exhibited the drawings immediately after the publication of the report of Professor Roger Smith (the assessor) and previous to the alterations. With the terms of the award we are prepared to agree, so far as an examination and comparison of the three designs is concerned. The successful designs of Mr. Hessell Tiltman, sent in under the motto of "Comme il faut," certainly surpass those of other competitors in method and convenience of plan. With regard to the elevations we can only say that the amended and coloured elevations are pleasing, and are far in advance of the sepia-tinted elevations which were submitted in competition. We may here mention that though evidently not intended for our inspection, an opportunity of inspecting two of Mr. Hessell Tiltman's superseded plans was afforded us, and the comparison between this plan and that which has been amended and exhibited, is an instructive one. One point, especially, we are unable to understand. Two swimming-baths, 90 ft. by 40 ft., are asked for in the instructions, but Mr. Hessel Tiltman has shown a second-class bath with a figured water space of 72 ft. by 37 ft., but the bath in question only scales 27 ft. This is misleading, and it is to be regretted that the credit of the additional 10 ft. has been given to Mr. Hessell Tiltman in the report of the assessor, though the error has been rectified in the amended plan. We may mention that rigid economy was absolutely necessary in designing this building, and that economy also was considered of the first importance in making the award, for the Commission did not feel justified in making a lavish expenditure of the money of the ratepayers, who decided by a bare majority upon the adoption of the Act in this locality.

The successful design shows the first-class swimming-bath adjoining Twyford-street, and this has the required size of 90 ft. by 40 ft. The second-class swimming-bath adjoins the latter, but has been kept much smaller both in length and breadth, which allows a small ante-room and lavatory accommodation to be placed at the west end for use in the event of public meetings being held in the winter; for exit in this case an additional door has been provided at the end of the Twyford-street frontage. At the other end of the small swimming-bath space is obtained for a convenient-sized hall, from which access is obtained to both the swimming-baths and to the eleven men's first-class baths, occupying a one-storied building at the corner of Twyford-street and the Caledonian-road. The pay office in one corner of this hall is flanked on each side by an entrance-passage. The north passage leads to the men's second-class baths, which are placed at the side of the small bath, and with a Board-room on the north side. Another entrance on the other side of the Board-room leads to the staircase to the women's baths on the first floor, and also to the establishment laundry, boiler-houses, and store spaces in the basement.

The arrangement of the wash-house and ironing-room has been considerably altered in the revised plans. The waiting-rooms and pay offices, originally placed in Stanmore-street, have been transferred to the Caledonian-road frontage, thus saving the expense of an attendant by utilising the pay box already mentioned. A feature has been made of a disinfecting-room and small yard at the corner of the Stanmore-street frontage.

A carefully-arranged suite of apartments for the Superintendent on the first floor is reached by a staircase from the hall already referred to. Mr. Hessell Tiltman's elevations have been considerably improved in the amended plans, and with the addition of colour have a pleasing effect.

The designs of Mr. J. Douglass Mathews, submitted under the motto "Cleanliness," have received the second premium; they differ in every way from those already mentioned. The baths are placed at the corners of the site, with their axis parallel to Twyford-street and Caledonian-road respectively. The intervening space is occupied by two entrances with pay-box between, and these also lead to men's first- and second-class warm baths placed behind. This arrangement makes a convenient plan, and is economical as regards administration. The establishment-laundry is placed at the extreme end of the Twyford-street frontage, and an adjacent staircase leads to the wash-house and laundry on the first floor. We cannot commend the position nor the projection of this compartment over a portion of the bath below, an arrangement which would be costly in construction and unsightly in execution.

Mr. R. J. Lovell's designs, submitted under the motto "Soap and water," have been awarded the third premium. The baths have been placed side by side; but, with a view to economise space and increase the water area, gangways have been omitted on one side, and a portion of the dressing-boxes of each bath on a gallery floor. We consider that the elevations of the second and third designs might have been much improved without adding to the cost of the building in any way.

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THE "NEW SCOTLAND-YARD."

The new and striking building which has been erected at the Westminster end of the Victoria Embankment for the headquarters of the Metropolitan Police is now practically completed, and the Police authorities have, in fact, taken partial possession of it.

The architect of the building, as our readers know, is Mr. R. Norman Shaw, R.A., and notwithstanding the criticisms of Sir William Harcourt and other would-be authorities on architecture,—criticisms with which we dealt at the time,—the building is one which is admirably adapted to the purposes for which it is intended. It will be devoted entirely to offices and stores for the several departments of police administration. There are no cells, as it is not intended to keep prisoners in the building.

The building forms a large quadrangular block, completely isolated and well lighted on all four sides, with a large courtyard in the centre, and a large open space or yard on the west side, between the building and the backs of the houses in Parliament-street. The granite for the massive plinth which forms so striking a feature of the external *façades*, and which is continued round the interior of the quadrangle, is from Dartmoor, and has been worked by the convicts there. A noteworthy point is that where the windows are partly below the line of this plinth, and partly above it, the mullions of the windows are in the same granite up to the level of the top of the plinth, above which level they are continued in Portland stone. There is, moreover, no moulding, string-course, or other feature in relief to mark the junction between the granite plinth and the superposed brickwork. The principal doorway leading to the offices is a very effectively-designed composition in Cornish granite, from the De Lank quarries. This doorway opens on to the new private roadway which will bound the building on the side nearest to the Houses of Parliament, and which, leading from the Embankment to Cannon-row, at the back of Parliament-street, will give access to the large yard or open space in the rear of the building, where cabs and other licensed vehicles can await the inspection which must precede the granting or renewal of a licence.

Internally, the building is very simple in plan, consisting of, in the sub-basement, a large brick-vaulted crypt extending under the whole area of the building (courtyard included). Above that portion of the crypt which is covered by the buildings is the sub-ground floor, which, together with the crypt, will be used for storage and other purposes. The ground-floor is a few steps above the level of the external roadway, and will be entirely occupied as offices. A broad, end-lighted, vaulted corridor runs along the centre of each of the four sides of the quadrangular block on this and the floors above, and opening into this corridor are doors giving access to the various departmental offices. Each departmental group of offices is so arranged as to be self-contained. The construction of the corridors and floors throughout is fire-proof. The greater part of the constructional ironwork was supplied by Messrs. Measures Bros., and the remainder by Messrs. Homan & Rodgers. The floors of the principal corridors are of marble-mosaic, executed by Messrs. Wilkinson, who also supplied and laid the concrete paving generally, including the granolithic with which the floor of the crypt and the courtyard are paved. The floors of all the rooms are laid with Mr. Roger L. Lowe's wood-block flooring. The stoves and casement-openers are by Messrs. Elsley & Co. The whole of the internal plumbing has been done by Messrs. Wenham & Waters, of Croydon, who have also executed the heating arrangements. The treads of all the stairs are of Craigleith stone. The electric lighting installation is by Messrs. Drake & Gorham. The lifts (for passengers and stores) are by the American Elevator Company. The dado mouldings and architraves in all the rooms are executed in Keene's cement. The doors are all framed in oak, but have pine mouldings and *papier-mâché* panels,—the latter concealing the diagonal members of the frame, and forming light but sound-proof doors, the whole being painted. Above the ground floor is a *mezzanine* floor devoted to offices of minor importance, and above that again is the first floor, in which, at the corner nearest Westminster Bridge, is the room for the First Commissioner. This room has pleasant outlooks from the windows of the angle-turret, and is lined for the greater part of its height with panelling in American walnut. This is the only room to which any richness of effect has been given. The tile-borders have been supplied by Mr. J. C. Edwards, of Ruabon. The second and third floors are entirely appropriated as offices, and the floors above partly as offices and partly as stores for clothing, boots, and everything else connected with police equipment. The upper parts of the external and quadrangular *façades* of the building are of red brick, with Portland stone dressings and strings. The whole of the work is built in cement, and the foundations are carried down to depths of from 30 ft. to 40 ft. into what was at one time part of the bed of the Thames, several old piles having been found. As far as possible the massive foundations of the ill-fated Opera-House, which was commenced and half-built on the site some years ago, have been utilised to carry the new building. All the external gutters are of stone, lined with Claridge's asphalte.

The building has been erected by Messrs. John Grover & Son, builders, of Wilton Works, New North-road, whose foreman has been Mr. William Brown.

The clerk of the works is Mr. Erant.

The total cost of the building will be about 120,000*l*.

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THE ART CONGRESS AT BIRMINGHAM:

PRESIDENTIAL ADDRESS IN THE SECTION OF ARCHITECTURE.

The following is the second half* of the address delivered by Mr. T. G. Jackson, M.A., F.S.A., as President of the Section of Architecture:—

To some it may seem that I have put too much into my curriculum; "Who, then," they will say, "can become an architect?" No doubt, all this is not to be done in the three or even five years of pupilage, and if an architect's education is, as many suppose, to be compressed into that term, there would be an end of the matter. But these three or five years, rightly regarded, are but the opening of a course of study which is to end only with the student's professional life. An architect is not like a tailor or a hatter, who, having once learned to make a coat or a hat, has nothing to do but to go on making similar coats or hats all his life. He has a duty to himself and to his art; he must be constantly trying to make his own work better, and himself a better artist; and, in so far as he succeeds in doing this, he will be doing something towards the general progress of art itself. I have given him enough to do; plenty to occupy all his working hours till his powers of work fail him; but not more than is well within the bounds of possibility; not more than is done by dozens of architects at the present day, I am happy to say; men whose work you would all rank deservedly as the best outcome of modern architecture, and not more than is accepted as their proper line of study by many, if not most, of those younger men in the promise of whose work lies the justification of our hope for the future.

It is needless, however, to say that this is not the education nor the practice of the majority of professing architects, but since they, most of them, undertake a vast amount of work in addition to architecture, with which it has as little to do as it has with medicine or divinity, they should be the last to charge my programme with being too full and comprehensive. If they would throw aside a great part of my scheme as superfluous and *mal à propos*, they more than fill up the gap by fresh subjects of their own, and those, too, subjects which are quite of a different nature. What can be more foreign to architecture than the valuation of building land, the letting of ground on building leases, the decision of questions of light and air, and the awarding of compensation for infringement of ancient easements? and yet these are all matters, strange as it may seem, that most professing architects consider within the scope of their business, and in very many cases they make up the greater part of it. Why skill in designing and building a house should be supposed to help a man to an estimate of the value of the land it stands on, is a curious question; it seems at first sight equally reasonable to take the opinion of a painter upon the market price of the cattle he puts in his picture. But whether absurd or not, so it is, that all this work which properly belongs to the surveyor, or the lawyer, is habitually undertaken by the architect. It is impossible that both kinds of work so undertaken can be well done: two callings so distinct as surveying and architecture can never be successfully practised by the same man, he cannot serve two masters, and either he will hate surveying and love architecture or he will despise architecture and hold to surveying. And when it comes to the question, which of the two must go to the wall, the issue is not doubtful. The surveying work touches upon property and income, and cannot be put on one side; it must be attended to at any cost first, and consequently architecture comes off second best, and is only attended to in spare hours. Very often, indeed, it is not done at all by the ostensible architect. Too busy to attend to it himself, he gets it done for him by some humble "ghost," to whom is due whatever merit the design possesses. At the Liverpool Congress, in 1888, I gave several instances that had come to my knowledge of large and important buildings — works offering splendid architectural opportunities — of which the nominal architect had not done a single drawing, in some cases the whole being the work of a "ghost," in others the details being filled in by the builder from sketches of the vaguest and roughest kind. I need not now do more than refer to what I then said. The buildings in question were, for the most part, erected by great corporations or city companies, and the nominal architect was their surveyor. The real architect in such cases is the poor "ghost," who surely deserves, in common honesty, whatever credit is to be got out of the building, but of whose existence neither employer nor public ever hear a whisper. As for the ostensible architect, he is nothing but a middleman, who contributes nothing to the work, and whose useless intervention might much better be dispensed with, leaving the employer face to face with the real designer, who would, in all likelihood, turn out much better work if he acted as the principal and not as his shadow.

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* We printed the first half last week.

Now, if this is the right way to practise architecture, it is clear that all I have been saying on the matter of education is beside the mark. If architecture is so easy a matter that it can be attended to in a man's off-time, it is idle to talk of devoting a life-time to it and finding that all too short. From this point of view, architecture is not an art at all; it is only an employment which may be usefully combined with the more commercially important profession of surveying, and this is no doubt the view of it which many people hold. At an Art Congress, such as this, it is surely unnecessary seriously to combat this opinion. To us, at all events, architecture is an art or it is nothing, and as such it demands the whole of a man's time and attention. It is impossible for men whose best hours are occupied in matters so foreign to architecture as those I have named to turn out anything better in the way of design than the mediocre stuff, even if it be no worse, with which our streets are lined. I do not blame these gentlemen for this,—far from it,—they are but human, and the fault is not theirs if they fail to achieve impossibilities. The blame lies with the public, who force an impossible task upon them, and rest so well satisfied with the melancholy result. By the separation of surveyor's work from that of the architect, both would be better done. Let the surveyor be satisfied with the important and honourable work which belongs to his profession,—work involving as much delicate and skilful conduct as that of the lawyer, to which it is in many points so closely allied, work which, if it will please him, I am quite prepared to admit is even more necessary and useful to society than ours. There is quite enough there to occupy him, and all we ask in return is that he should leave to us architects that which he cannot attend to himself, but to which we are ready and anxious to devote the service of a life-time. There can be no hardship in this to any one. There would be the same amount of work to do, and the same number of men to do it, but it would be differently distributed, each man taking up that calling for which he was best fitted by his natural endowments, and following it with all his powers, free from the distraction and interruption of other work of an utterly different nature.

Returning to the education of the architectural pupil, the question arises, How he is to get that part of it which lies outside the doors of his master's office? Is he to pick it up for himself as well as he can, or, if not, what is there to help him to it? Now, indubitably, in many ways, a man is his own best master; and the greater his turn for art, the more important it is that he should not be fettered by system, but encouraged to follow that line of study which most attracts him, and to develop his knowledge in his own way. But at the same time, I am far from undervaluing the help a beginner may receive from organised methods of teaching by classes and lectures and in the studio. For many years the Architectural Association, a body recruited from the younger members of the craft, has carried on the work of mutual improvement in a manner which it is difficult to praise too highly. If has its regular classes for instruction by volunteer teachers; its meetings for reading of papers and discussion, its designing club, its travelling studentships, and, in summer time, its excursions to visit new buildings or buildings in progress, and to sketch and measure old buildings, not only in England but on the Continent. Hitherto the system of instruction has been voluntary and mutual, but it is now proposed to organise it more efficiently with paid teachers and an architectural studio. In order to carry out this programme, which naturally involves new and heavy expenses, the Association applied to the Institute of Architects, the older and wealthier society, in hope that that body would put itself at the head of the new educational scheme and aid it with its resources. The Institute, on its side, has also been agitated by the question of education, but has come to a very different conclusion to that of the Association; its solution of the problem being to establish a system of examination, and to close its doors to all who fail or decline to pass it. The reply that was received by the Association, therefore, was to the effect that the Institute was not a teaching but an examining body. The Association, having thus asked for bread and received a stone, is now thrown back on its own resources, and is courageously trying to carry out its educational scheme unaided from without, a task in which we may heartily wish it success.

With regard to the examination question, while fully recognising the good intentions of the members of the Institute, and the pains they have taken with their scheme of examinations, I cannot but feel that, like many other people, they have confused examination with education as if they were the same thing, instead of being, as they are, perfectly distinct, and sometimes even opposed to one another. In other branches of study the balance of opinion seems inclining against examination; it has been protested against by many head-masters and professors, and is only accepted by others as a necessary evil and because no substitute for it can be found. It is altogether idle to attempt to justify the examination of architects, and the diploma which is the next step we are threatened with, the effect of which would be to make architecture a close profession, on the ground that law and medicine are already close professions, and that admission to their ranks can only be had by examination. Society imposes these tests on lawyers and doctors for her own sake, not for theirs. Her object is not to educate them, but to protect herself from doctors who do not know the effect of their own drugs, and lawyers who cannot draw a conveyance or a will through which you could not drive a coach and horses. If, in the same way, society thought fit to guard herself against unwholesome and insecure buildings, by requiring that everyone who built a house should pass an examination in building construction, it might be a very good thing, provided, of course, builders, surveyors, and engineers had to pass it as well as architects; and this would be the true parallel case to that of the lawyers and doctors. But to think that any test can be devised to protect society against bad architects, and secure to her the blessing of good art, is as ridiculous in the case of architecture as in that of painting or sculpture. You may examine the student in construction, and enable him to show himself a competent builder; you may examine him in the history of architecture and the character of its various styles, and enable him to show himself a fair antiquarian and historian; but no examination you can devise will measure his artistic capacity. He may be commonplace in intellect, unsusceptible of impressions of beauty, vulgar in taste, and hopelessly barren of invention, and yet what examiner would dare to reject him on those grounds, even if he were able to discover them? Provided he can pass muster in those subjects which can be learned from books and lectures, you will be bound to pass him, to set your seal upon him, to hall-mark him as sterling metal, and to produce him to society as your idea of an architect.

If I may offer a suggestion to the Architectural Association with reference to their scheme of education, it would be this,—that success in examination should not be the goal towards which the aim of the student should be directed. That can never form a worthy motive for study. Let the young architect pursue that which interests him, and that which he feels he wants and ought to know as an artist, and not that which he thinks will pay best with the examiners. In the printed report of the Association are these words:— "We are of opinion that the subjects included in the intermediate and final examinations of the Royal Institute do not comprehend the whole of the knowledge necessary to an architect, and that provision should, therefore, be made for the study of certain additional subjects." What these are may be gathered from a paper read to the Association by Mr. Reginald Blomfield, from whom, I am happy to say, we are to hear more on the same subject this morning. He says:— "An exhaustive syllabus has been provided for the study of the history of architecture and of the science of construction and drain-pipes, yet I still think that one particular corner remains untouched, and it is the education of architects as artists." Such matters as modelling, study of colour, figure-drawing, and general design of other things besides pure architecture, are subjects which will not pay with the examiners, and cannot be brought to the test of examination; but nevertheless they do, I rejoice to see, form part of the course of study which the more active members of the Association propose to themselves.

But there is another side to the question of education in art. It is of no use training artists unless the public on their part learn to recognise and appreciate good art when it is offered to them; and as to the general incapacity of the British public for anything of the kind artists seem to be unanimous. From all sides at the two preceding Congresses at Liverpool and Edinburgh arose a chorus of lamentation over the dulness and indifference of society. And if this is true of the other arts it is so in a still greater degree of architecture. Every man likes to be thought to have an opinion about pictures; but how few are ashamed to confess that they understand nothing about architecture, and do not care to learn? Even among professional artists who are not architects, how few have given any attention to it; how seldom does a painter even learn to draw it correctly, and how often is an architect's eye offended by crippled arches, mis-proportioned columns, false perspective, and ill-drawn details of buildings in pictures otherwise meritorious? How often, too, will you see accomplished painters dwelling contentedly in homes of the most appalling architecture? And if such as they are ignorant or careless of the difference between good and bad architecture, what hope can there be of finding the general public more discriminating?

But if the public neither know good architecture when they see it, nor take any pains to get it, depend upon it no improvement in the present state of things can be hoped for. Art follows the general laws of economic science; there will be no supply unless there is a demand. So long as you are content with the average architecture of the present day, so long will you go on getting that and nothing better. As Sir Frederic Leighton said, in his inaugural address at the first of these Congresses, "What you demand that you will get, and according to what you accept will be that which is provided for you." Individual architects may do their best and get well ahead of the current taste of the day, but the number of those who employ and value them is so limited that the few really good buildings produced under such conditions stand out as exceptions, and have no power to lift architecture, as a whole, out of the bathos into which it has sunk. They show the way, but it rests with you to follow. "That architecture is not dead," said Professor Aitchison, at the Liverpool Congress, "is because architects present it gratuitously to their employers." There is no general demand for it; the wretched architectural failures that spring up on all sides are what the public really like, or they would never be built, and the men who build them would have nothing to do, and so long as this is the case we shall have nothing better, except in the isolated cases to which I have alluded.

And yet surely of all the arts there is none that concerns us so closely as architecture. Life is possible without the others, but not without this. There is no escaping from it. Painting and sculpture have to be sought out, and, when bad or uninteresting, may be avoided; but architecture is ever with us; you have it in your home, and it meets your eye at every step as you walk down the street. Surely if any form of bad art is insufferable, bad architecture,—which you cannot run away from or move out of the way,—is, or should be, the most intolerable of all; and if any form of good art is pleasurable, none is so capable of giving constant enjoyment as architecture when it is good. Surely it is worth the while of every educated man and woman to acquire such a measure of architectural knowledge as will enable them to recognise and enjoy good work when they see it, and, as a natural consequence, to eschew the bad.

The architectural education of the public formed the subject of two papers read at the Congress last year. Both authors argued that some instruction in the history and characteristics of the various styles should be taught as part of an ordinary school education. This is, no doubt, very desirable so far as it goes, but it is not enough without some instruction in the general principles which underlie all styles, and to which they owe their being. It is very easy to study art too much and too exclusively on the historical side, and to forget that we, too, have it in us, if we please, to contribute a chapter of our own to the history of art, and that our studies of the past ought to be only instrumental to our better use of the present. If our work is to have any real life now, and any claim to the respect of those who follow us, it must be no mere reproduction of bygone styles; it must be intensely modern, instinct with the spirit of the age in which we live,—surely the most wonderful and original the world has ever witnessed. I have heard a modern building condemned by a popular critic because it was like nothing he had ever seen. This reminded me of the Latin prose and Greek iambics of our school and college days, when, if ever we ventured on some humble flight of our own, we were pulled up with the question, "Where do you find that? What is your authority?" Even then we used to feel that, poor as our invention may have been, it was not condemned on the proper ground. And so when you see something in modern architecture that strikes you as novel and unexpected, do not ask whether there is authority for it in the past, but ask yourself whether it is reasonably constructional, suggested by some necessity of plan or material, or resulting from some artistic idea of proportion or composition; in short, not whether there is a precedent for it, but whether it is sensible and beautiful, and if you find it to be so, for heaven's sake welcome it, and rejoice over it as a sign of life and progress. As a last word I would say, think for yourself, and defy the critics. "You English," said Canova, "see with your ears." At a Congress like this, when we are met for the purpose of talking about art, it may seem ungracious to say that a great deal too much is written and said about art than is good either for artists or for the public. And yet there is no doubt that the analytical discussion of art, especially from a subjective point of view, does much to divert our attention from the proper use of it. Art is meant to be enjoyed in a healthy, natural, unconscious way, like the landscape, the sky, and the flowers, and if we philosophise about it, analyse and dissect it, we are but treating it as the botanist treats the flower when he pulls it to pieces, petal from petal, to scrutinise it bit by bit under the microscope, and so destroys the object of his researches.

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ARCHITECTURAL SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION AND THE RAILWAY SCHEMES.—A special meeting of the Edinburgh Architectural Association was held on the 7th inst. to consider the schemes of the Caledonian and North British Railway Companies, when resolutions were adopted thanking the Lord Provost for the judicious attitude he has assumed on the question, urging the Town Council to oppose any proposal to encroach on Princes-street-gardens unless it was proved to be absolutely essential for the public convenience, and protesting against any embankment of the tunnel along Princes-street. It was also agreed to call not only for plans, but sections and elevations of the proposed alterations of the Waverley station, and the change which will be effected on the architecture of the city by the Caledonian project. These resolutions were ordered to be sent to the Lord Provost.

DUNDEE INSTITUTE OF ARCHITECTURE, SCIENCE, AND ART.—The Dundee Institute of Architecture, Science, and Art opened its winter season by a *conversazione* in the Victoria Art Gallery on the 5th inst., when the President, Mr. Ower, delivered an address.

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THE ITALIAN RENAISSANCE.—Under the title, "Arte Italiana, Decorativa e Industriale," an important monthly publication, illustrative of Italian Renaissance work, is to be issued shortly by Ongania, of Venice.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of this Council was held on Tuesday afternoon last, Sir John Lubbock in the chair.

Free Library for Bermondsey.—On the recommendation of the Finance Committee, it was agreed, subject to the usual conditions, to lend the Vestry of Bermondsey the sum of 7,000*l.*, to defray the cost of erecting buildings for a new Free Library for that parish.

The Bethnal Green Slum Scheme.—With regard to this scheme, the Finance Committee reported, for the information of the Council, that the Committee had passed the following resolution:—"That this Committee recommends the Council to sanction the incurring a liability for the Bethnal-green Improvement Scheme not exceeding 300,000*l.*, and that such amount be included in the estimate to be now submitted to the Council;" and that the amount had been included accordingly.

Report of the Special Committee on Contracts.—This report, the discussion of which was adjourned until next week, owing to the late hour at which it was reached, was in the following terms:—

"Your Committee have proceeded upon the reference made to them on June 4, 1889 (No. 5), to receive a deputation from the London Building Trades Committee, and to inquire into the subject of fair contracts which that body wished to bring before the Council. Your Committee have had an interview with the London Building Trades Committee, and have also received deputations from the Amalgamated Union of Street-masons, Paviors, and Stone-dressers, and the London Amalgamated Trade Society of Upholsterers. The representations made by each of these deputations were in the main of similar character, and may be briefly summarised as follows:—That contractors were in the habit of driving their workmen to scamp their work, and also of employing inferior workmen at low wages; that sub-contracting was a common practice; that sub-contractors were unscrupulous in the means they adopted to insure a profit; and that the workmen and the quality of the work alike suffered in consequence. The deputations urged that with a view to remedy to some extent this state of affairs, the Council should exercise a rigorous supervision over all work done for it under contract; that sub-contracting should be absolutely prohibited; that a scale of the wages to be paid to the workmen should be attached to every contract; that all contractors should be compelled to observe the trade union rules in relation to hours of labour and rates of wages; that the Council should impose heavy penalties upon contractors offending in these respects, even to the extent of refusing, after offence had been proved, to allow them to again tender for works under the Council; and, further, that all the Council's contracts should only be let to London firms, and the work under them be executed by London workmen. The deputations were, however, unanimous in the desire that the Council should employ its own workmen, and should carry out its own works, without the intervention of contractors.

Your Committee have carefully weighed the statements with reference to inferior workmanship, but can find no positive evidence that inferior work has been done for the Council or for its predecessor, the Metropolitan Board of Works. They are, however, fully alive to the importance of keen supervision being exercised over works of construction, and are of opinion that the Clerks of Works employed by the Council should be highly trained specialists who should be capable of promptly detecting inferior materials or bad workmanship.

With the allegations of sub-contracting, your Committee have found it very difficult to deal, having regard to the impossibility of defining what is the real meaning of the term in the sense in which it is used by the deputations and understood and applied by the contractors. Workmen apply the term sub-contracting to any other form of labour than day-work. Piece-work, task-work, bonuses to foremen, or any arrangement made of a special kind, is, in their opinion, sweating or sub-contracting. Some contractors do not consider piece-work and task-work to be sub-contracting, and regard sub-contracting as effected only when they enter into a contract with a second person who finds both labour and materials. The clause usually inserted in the Council's contracts with reference to this subject is as follows:—

'The contractor is not to assign or make over this contract to any other person, nor to underlet it, nor to make a sub-contract with any workman or workmen for the execution of any part of the brickwork, groundwork, masonry, or any other work appertaining to this contract, but he is to employ his own workmen for the labour thereof, who are to be paid by him in wages by the day. And in case the contractor assigns or makes over this contract or makes a sub-contract contrary to this agreement he shall for each offence forfeit to the Council the sum of £500, which shall be deemed liquidated and ascertained damages, and may be recovered by action or deducted by the Council from any sum or sums due or to become due to the contractor under this contract or otherwise howsoever; and should the contractor or his agent give any gratuity to any officer of the Council, the Council shall be at liberty to determine this contract.'

This appears to your Committee to be sufficiently stringent for the protection of the workmen employed, more especially as the Council now requires every person tendering to make a declaration that he pays such rates of wages and observes such hours of labour as are generally accepted as fair in his trade; and the London Building Trades Committee concurred with this view. Your Committee would, however, point out that if taken in its literal meaning and applied to the whole of the works under some contracts, this clause would become unworkable, inasmuch as in many cases it is absolutely necessary for the contractor to enter into sub-contracts for the supply of certain portions of the materials to be used, as, for instance, iron girders, and also for the execution of some of the work which he would himself be unable to produce or carry out. Your Committee are of opinion that such cases should be provided for by an addition being made to the clause; and they recommend—

'(*a*) That the following words be added to the clause, now inserted in the Council's contracts, with reference to sub-letting or sub-contracting—'But the Council retains power to allow the contractor to sub-let such special portions of the work as would not be produced or carried out by him in the ordinary course of his business.'

With regard to the suggestion that a schedule of the wages to be paid to the workpeople should be attached to each contract, your Committee are of opinion that, previously to any action being taken on the question, the various trade societies should submit the schedules of hours, wages, and conditions of work which they desire should be adopted.

With reference to the suggestion that the letting of the Council's contracts should be limited to London firms only, and that the work should be carried out by London workmen exclusively; your Committee are of opinion that if this course could be taken, which they have reason to doubt, its adoption would inevitably add materially to the cost of the works carried out by the Council. Stone and iron, for example, can only be obtained from places at a distance from London, and the advantage derived from their being fashioned at or near their sources is twofold,—the work of preparing them is more efficiently and economically done, and the cost of carriage is less, inasmuch as the weight is reduced by the waste portions being left behind, and only the completed parts carried to the buildings or other works for which they are required. Inspection to ensure good work can be insisted upon even during production.

With regard to the suggestion of the deputations that the Council should employ its own workmen and carry out its own works without the intervention of a contractor, your Committee are of opinion that this could not be done without involving a very large outlay for plant, which the Council would not be justified in incurring. Indeed, the special plant required for some works would probably cost as much as the works themselves. Moreover, the Council could not keep in permanent employment a sufficient staff of workmen to cope with a sudden emergency, such as the bursting of a sewer for instance. Your Committee would point out that the Council has in many cases where men have been employed through a contractor on work of a continuing character, taken these men into its direct employment and dispensed with the contractor's intervention; and your Committee think that this course should be followed wherever practicable. There can be no doubt that it is better for the men to be employed directly by the Council, and the contractor's profit on their labour is to a large extent saved. Your Committee therefore recommend—

'(*b*) That all work of a continuous nature, which does not involve a large outlay for plant, &c., such as the cleansing and watching of the bridges and embankments, &c., under the control of the Council, be executed as far as possible by men directly employed by the Council, without the intervention of a contractor.'

Your Committee further recommend—

'(*c*) That a copy of this report be sent to the London Building Trades Committee, the Amalgamated Union of Street-masons, Paviors, and Stone-dressers, and the London Amalgamated Trade Society of Upholsterers.'"

Proposal to take Pupils in the Offices of the Council.—Mr. Brereton moved,—

"That it be referred to the Standing Committee to consider and report whether it is desirable, in the interest of the public, to utilise the educational advantages to be obtained in the professional departments of the Council by allowing the heads of those departments to receive a limited number of pupils."

In support of his proposal the mover urged that it was very difficult to get competent, "all-round" men to fill important appointments on their staff, particularly in the Engineer's department. This he attributed partly to the fact that as a rule municipal engineers holding public appointments were debarred from taking pupils, and partly to the fact that in all such offices the assistants were kept too much to one branch of work.

Dr. Longstaffe seconded the motion, which was opposed by Mr. Burns, Mr. Howell Williams, and Mr. Beachcroft, who all contended that the proposal was an impracticable one.

The subject was still under discussion when the Council adjourned.

Illustrations.

DECORATIONS: ST. GEORGE'S CHURCH, NEWCASTLE-ON-TYNE.

We give this week reproductions from photographs showing the chancel decoration of this church, the general scheme being designed by Mr. T. R. Spence, the architect of the church; the figures of the Apostles were drawn by Mr. C. W. Mitchell. Mr. Spence writes:—

> "The entire available wall-space is covered with mosaic, somewhat after the manner of the famous fifth and sixth century mosaics in the churches of Ravenna. On the north and south walls are ranged the Twelve Apostles, at the same height as the three figures on the east wall, of our Lord, the archangels Michael and Gabriel. The background to these figures and to all forms of ornament embraced in the scheme is of deep blue, slightly varied in tone over the surface. Above the figures runs a deep band of enriched strongly-coloured conventional foliage. The spandrels of the arches between the morning chapel and the organ-chamber are filled with figures of angels representing acts of praise."

The mosaics were executed by Messrs. Rust & Co. Several coloured drawings of the work are at present hung in the first-floor balcony or corridor at the Arts and Crafts Exhibition.

STUDENTS' CLUB, ERLANGEN.

This is a students' club for a small University town. The *façade* is of sandstone, with coloured majolica work inlaid in the walls. The basement contains kitchen, larders and store-rooms. On the ground-floor is a large saloon, a beer-room with a verandah, and a billiard-room. The first floor contains the drawing-room, reading library, &c.

The architect is Herr Theodor Eyrich.

SCHWARZENBERG CASTLE, FRANCONIA.

This is a restored elevation of a castle belonging to the Princes of Schwarzenberg, who now however live chiefly in Bohemia, and the German castle has been turned over for offices and habitations for officials connected with the estate. The restoration of the *façade* has been carried out under the direction of Herr Theodor Eyrich, of Nuremberg.

LODGES, PARK HATCH, GODALMING.

These lodges will flank the principal entrance to the park. The walls are built of Bargate stone, and the roofs are covered with Horsham stone slates. The timber work in the gables is oak. The carriage-way is stone pitched. The covered ways are paved with red brick. The lodges are placed between old yew hedges.

Messrs. Mitchell Bros., of Shalford, are the contractors, and the architect is Mr. Edwin L. Lutyens.

HARLESDEN SCHOOLS.

The design for these schools was selected in a limited competition. They are about to be built in Acton-lane, and afford accommodation for 300 children. There is a great fall in the ground from the front to the back; this necessitated a covered playground under part of the girls' school. They are to be built of red brick, with stone dressings to the windows; the roofs to be covered with slates. The builder is Mr. Collinson, of Teddington; the architect, Mr. J. Martin Brooks.

◆

The Village Hall, Orpington.—Messrs. Thomas Gregory & Co., of Clapham Junction, write to say that their system of wood block flooring was used in this building, illustrated and described in our last. The omission was not ours.

Millbank Prison.—The Penitentiary at Millbank, which until four years ago served as one of our largest convict prisons, was finally closed on the 1st inst. The premises will be vacated on or before the 16th inst., and then, we understand, the site will be cleared.

COMPETITIONS.

Board Schools, Oldham.—A special meeting of the Oldham School Board was held on Saturday last to decide upon the plans for Coppice School, when the assessor (Mr. W. Landless, Architect to the Leeds School Board), who was appointed to adjudicate upon the plans, was present. It was stated that thirty-eight designs had been sent in, four of them being from local architects. The whole of the designs had been carefully examined by the assessor, who had selected seven for the special consideration of the Board. These were gone through, one by one, after which it was decided to award the premiums as follows:—First premium of 50*l.* to the author of the design numbered 1, Mr. G. E. P. Lawrence, Albert Buildings, Queen Victoria-street, London. Second premium of 15*l.* to the author of the design numbered 33, Messrs. Phillips and Holdgate, Newport and Cardiff. Third premium of 10*l.* to the author of the design numbered 15, Messrs. Winder and Taylor, Priory Chambers, Oldham. The designs are on view in Messrs. Scott Bros.' rooms, Ascroft-street, and will be open to the inspection of the public for a few days.

Ayr Free Library.—The Committee met on Monday night, and decided that in the new building there be a lending and reference department, with shelving for 30,000 volumes. The general reading-room is to have accommodation for 100 readers; a small room is also to be provided for ladies. The cost of the site is under 2,000*l.*, leaving about 8,000*l.* for the building itself. The following architects were asked to send in competitive plans:—Mr. Washington-Browne, Edinburgh; Messrs. M'Arthy & Watson, Edinburgh; Campbell, Douglas, & Morrison, Glasgow; T. L. Watson, Glasgow; John Honeyman & Keppie, Glasgow; John Burnett & Campbell, Glasgow; D. Sturrock, Glasgow; J. M'H. Young, Stirling; Morris & Hunter, Ayr; Wm. Kerr, Ayr; and H. Eaglesham, Ayr.

The Ashton, Stalybridge, Hyde, and District Carriage Co.'s Premises.—In an open competition for new premises for these buildings the first premium has been awarded to Mr. Joseph Lindley, of Hyde, the second to Messrs. J. George & Son, Ashton, and the third to Messrs. Benwell & Taylor, of York.

THE PAST, PRESENT, AND FUTURE OF THE ARCHITECTURAL ASSOCIATION.*

We last week printed *in extenso* the two papers on this subject read at the last meeting of the Association by Mr. A. Beresford Pite and Mr. Walter Millard. We now give the remaining two papers, by Mr. Needham Wilson and Mr. Owen Fleming.

Mr. Needham Wilson's Paper.

I must confess to a feeling of hesitancy in addressing the Association on this subject, for, receiving my student education in the provinces, I had passed the time, on arriving in London, when the Association's Classes could have been of the most benefit to me. But though I am debarred by this and my recent membership from speaking of the past with the intimate knowledge of many here, I trust I can be acquitted of lukewarmness since I have been called upon to interest myself actively in the objects of this Association. Indeed, I fear I may be rightly taxed with presumption in giving my views on its work and prospects after so short a service in its ranks. But though I cannot speak authoritatively of the past, the present affects me, and the future excites my warmest interests.

The past of this Association requires neither eulogy nor defence from me. Results speak for themselves, and I need mention no names to remind you of the work this body has done, and the manner in which it has set its seal on the architecture of to-day. I therefore confidently leave the past to take care of itself, and pass on to the present, which seems to me to be indissolubly linked with the future, and about which I can speak with more confidence.

Now, it is claimed by some that the Architectural Association is not to-day justifying its past high character and traditions. We are bidden to believe that it has not moved with the times, and that, if it is to maintain its high character and traditions, alterations must be made in its methods of teaching. Thus we are led to believe that the Architectural Association is in a transitory state, and its affairs in a state of chaos. But if the educational methods that have obtained hitherto have been so successful, why are they so no longer? What has occurred to disturb the equilibrium of the Architectural Association, and what has led many of its members to believe that we are lagging behind the age? If we are losing ground, how is it that we now number 1,129 members, against 1,052 two years ago? Or does this indicate a paper strength represented by the 100*l.* arrears of subscriptions? I take this augmentation of numbers to imply approval of the educational methods, and not as an argument in favour of change. Indeed, I find that the increase of members is less at the commencement of this session than it was at the beginning of last session. Is this the result of the proposed changes? Why are they necessary? We are told that we are not meeting the educational demands of our students. Let us examine this statement, which seems to be based on the assumption that the Architectural Association is above everything a teaching body. This assumption appears to be of recent birth, for the first clause of Rule 2 surely cannot be construed into such a meaning. Then why should the suggestion now be made? Is it because of that bogey which is always being dangled before our eyes, the Institute Examination? Is this the cause of the solemn opening declaration of the committee appointed to inquire into our educational methods? "Gentlemen," they begin, "it has for some time been evident to those members most intimately acquainted with the working of the Architectural Association, that a desire existed amongst the active members (who are the active members?) for some change in the teaching methods hitherto followed." What has occasioned this desire, unless it is the Institute Examination? If so, it follows that the aim and end of this Association, as far as its educational adjuncts are concerned (and these are to be paramount), is to prepare students for that Examination. I say nothing against the Examination, as far as it goes, but I do object to its being made the basis of our educational methods. The very wording of the committee's report is contradictory on this point, for though somewhat ostentatiously announcing it as the basis of their proposals, they seem to have had a lingering presentiment that it was not all it should be, and so they interspersed in parenthesis, and as a sort of afterthought, the enunciation that it would not form the limit of any systematic scheme of instruction established by the Architectural Association. I am led to ask—if not the limit—*why* the basis? And why should this Association resolve itself into an academy for preparing students for the Institute Examination? I venture to think that the chief function of this Association is neither to compete with other organisations as to which shall have the honour and glory of turning out academic architects, nor to become a mere cramming machine, nor to usurp the system of pupilage. I venture to think that the educational functions of the Association are distinctly supplementary, and were designed to furnish the student with facilities for studying those subjects which he could do in office hours. I am not giving an essay on the pupilage system,—the spirit and vigour of our architecture as compared to the academic style on the Continent is its best defence,—but I do take this opportunity of emphatically protesting against any educational scheme that will have the effect of doing away with that system. The jeers that met some remarks of mine on this subject not long ago considerably opened my eyes, and certainly did not tend to dispose me favourably to such an educational scheme as that before the Association. Up to that point of the controversy I certainly never contemplated such a result of the proposals; but the way in which my remarks were received left no doubt that the majority of those present so considered it, to say nothing of subsequent speeches. I have nothing to say against any scheme to prepare students *before* entering an office. By all means let us have one. But I judged that many would far rather receive their training in the Architectural Association or other Classes than in an architect's office. Where, then, would they receive that early practical acquaintance with office routine that is so essential? I venture to think that a man must be born an architect, and no amount of office or academical training will make him one if it is not in him. He may make a tricky draughtsman, he may know to a decimal fraction the

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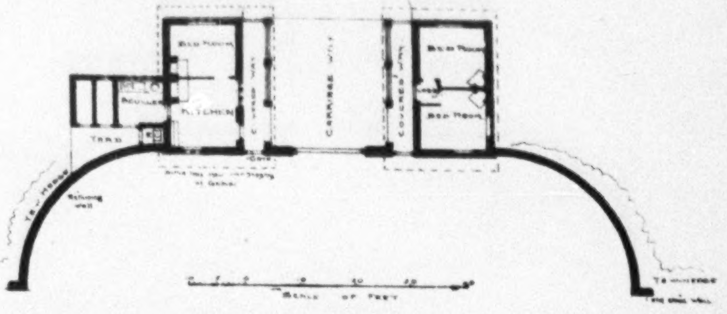
* See p. 369, *ante*.

NEW LODGE
PARK HATCH
-GODALMING-
EDWIN L. LUTYENS
ARCHITECT
16 ONSLOW SQUARE
S.W.
SEPT^R 1890.


BED ROOM
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KITCHEN
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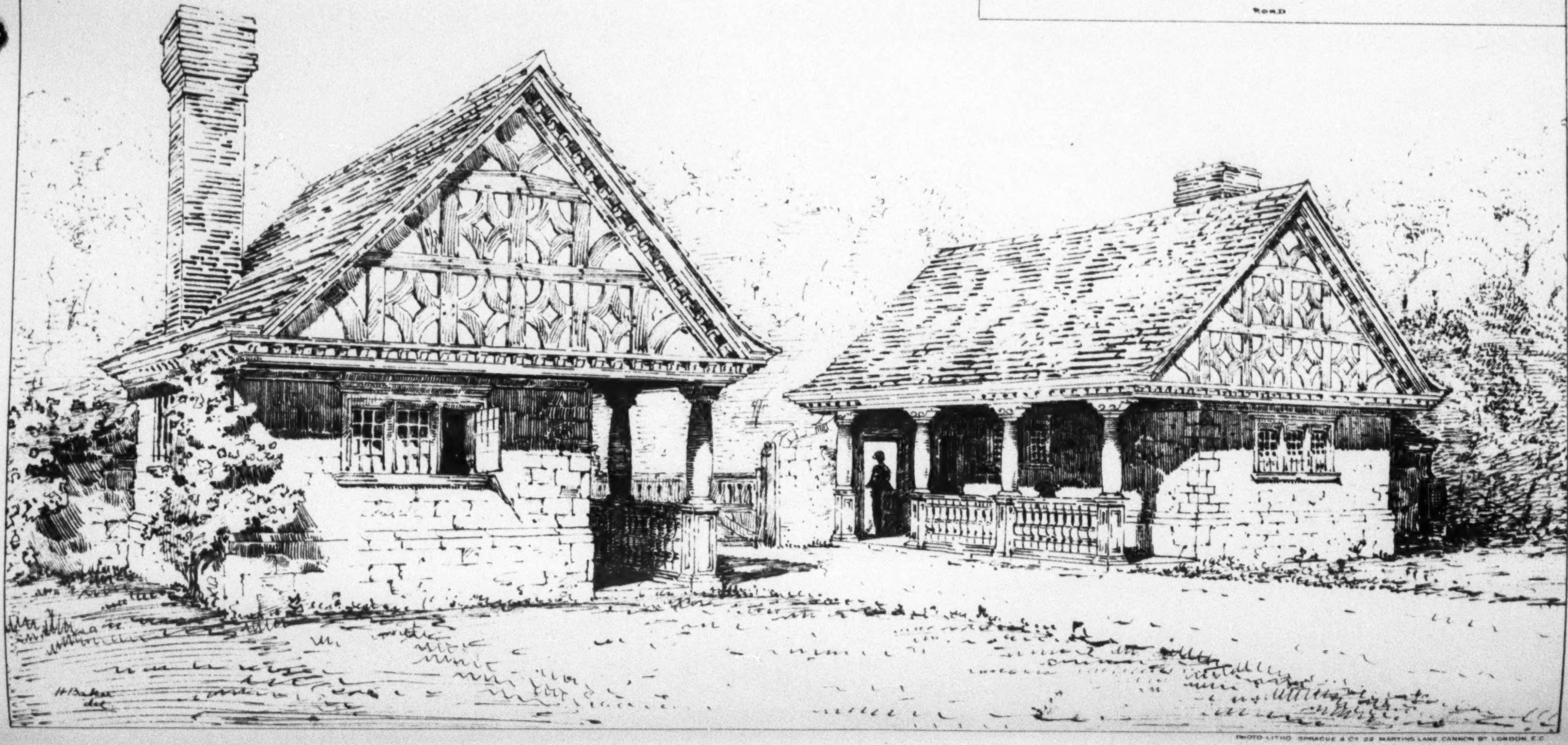

PHOTO-LITHO. SPRAGUE & Co 22 MARTINS LANE CANNON S^T LONDON E.C.

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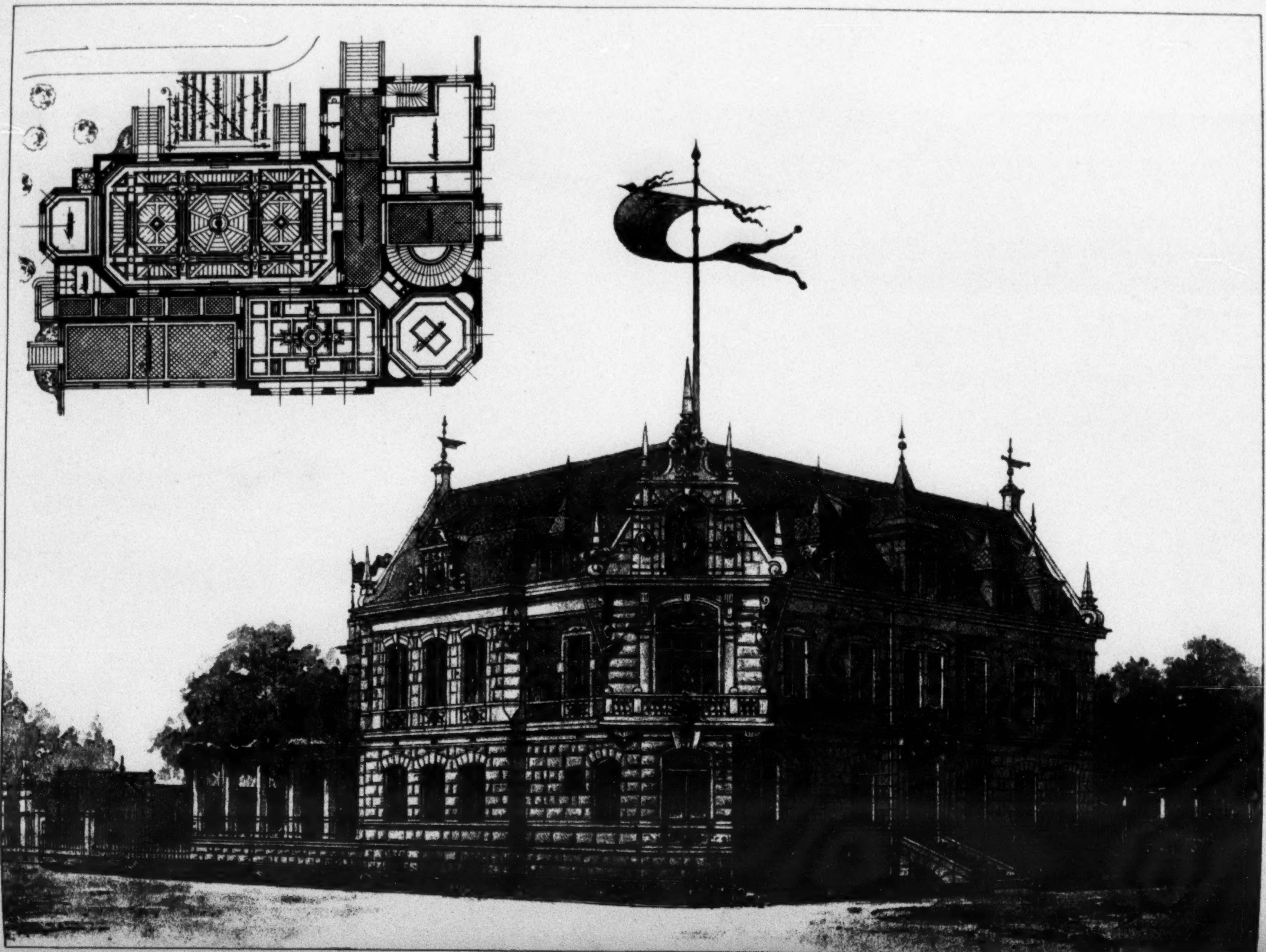

PHOTO-LITHO. SPRAGUE & CO. 22 MARTINS LANE CANNON ST. LONDON, E.C.

STUDENTS CLUB AT ERLANGEN, BAVARIA.—Herr Theodor Eyrich, Architect.

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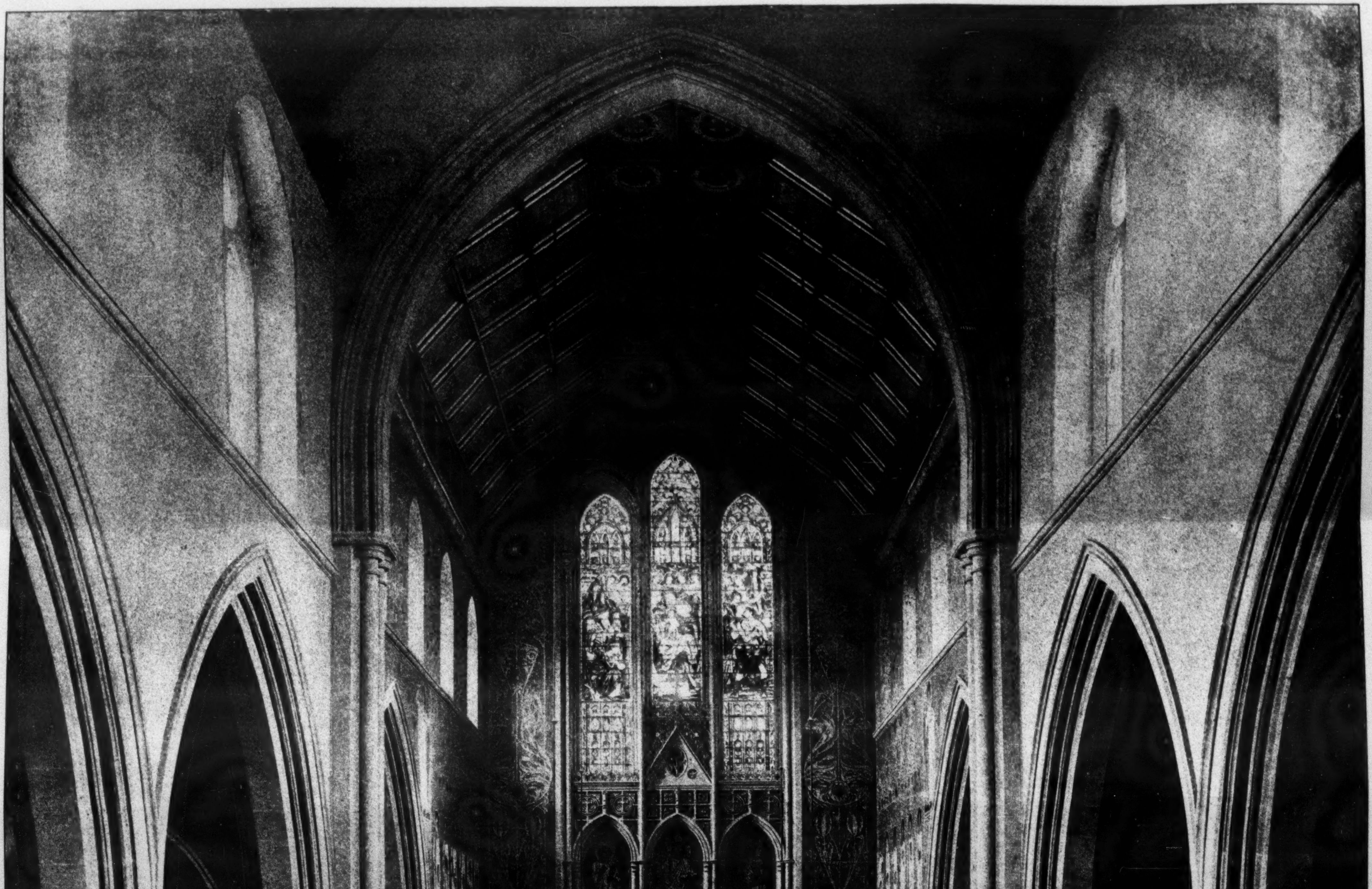
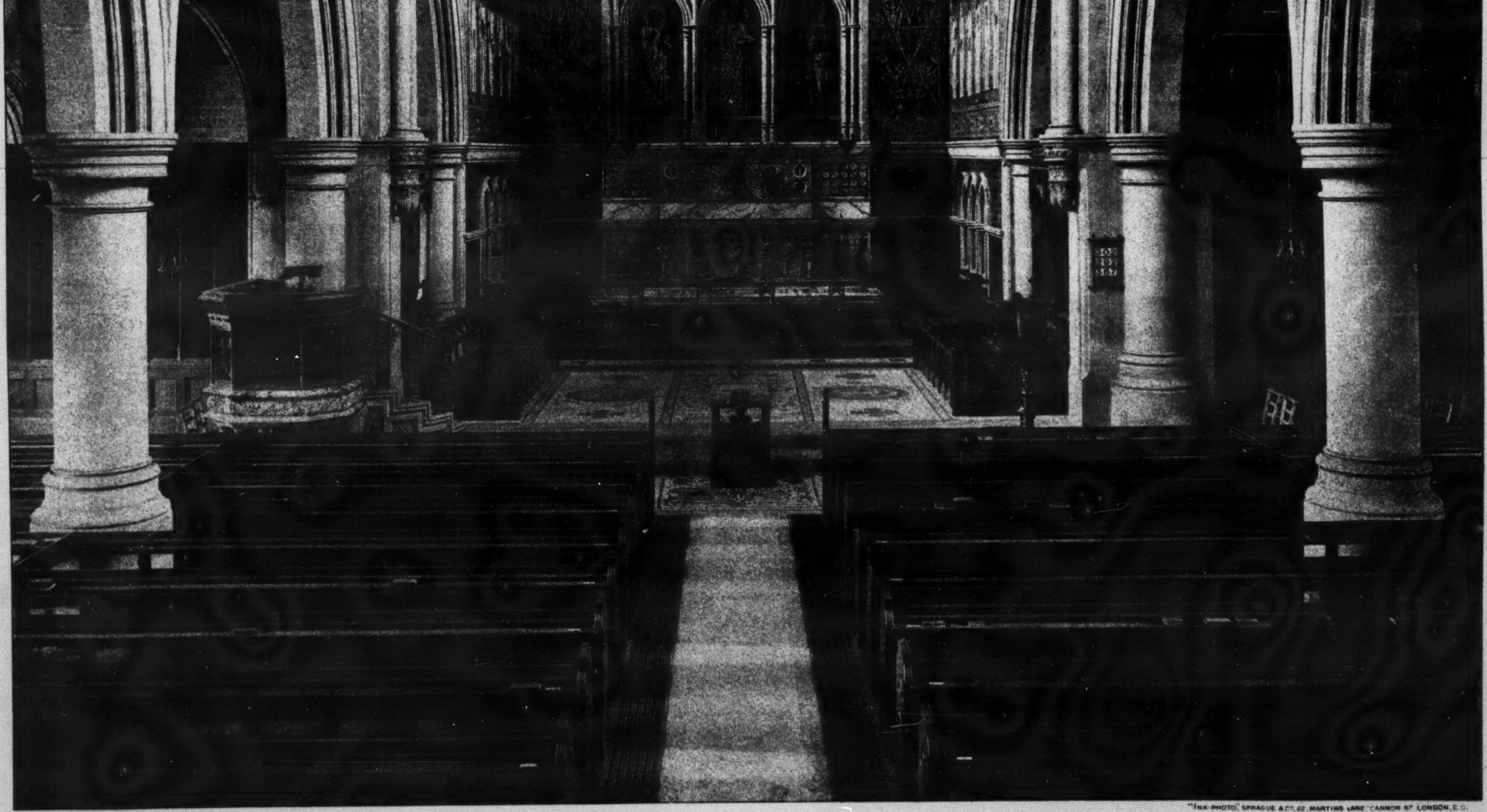
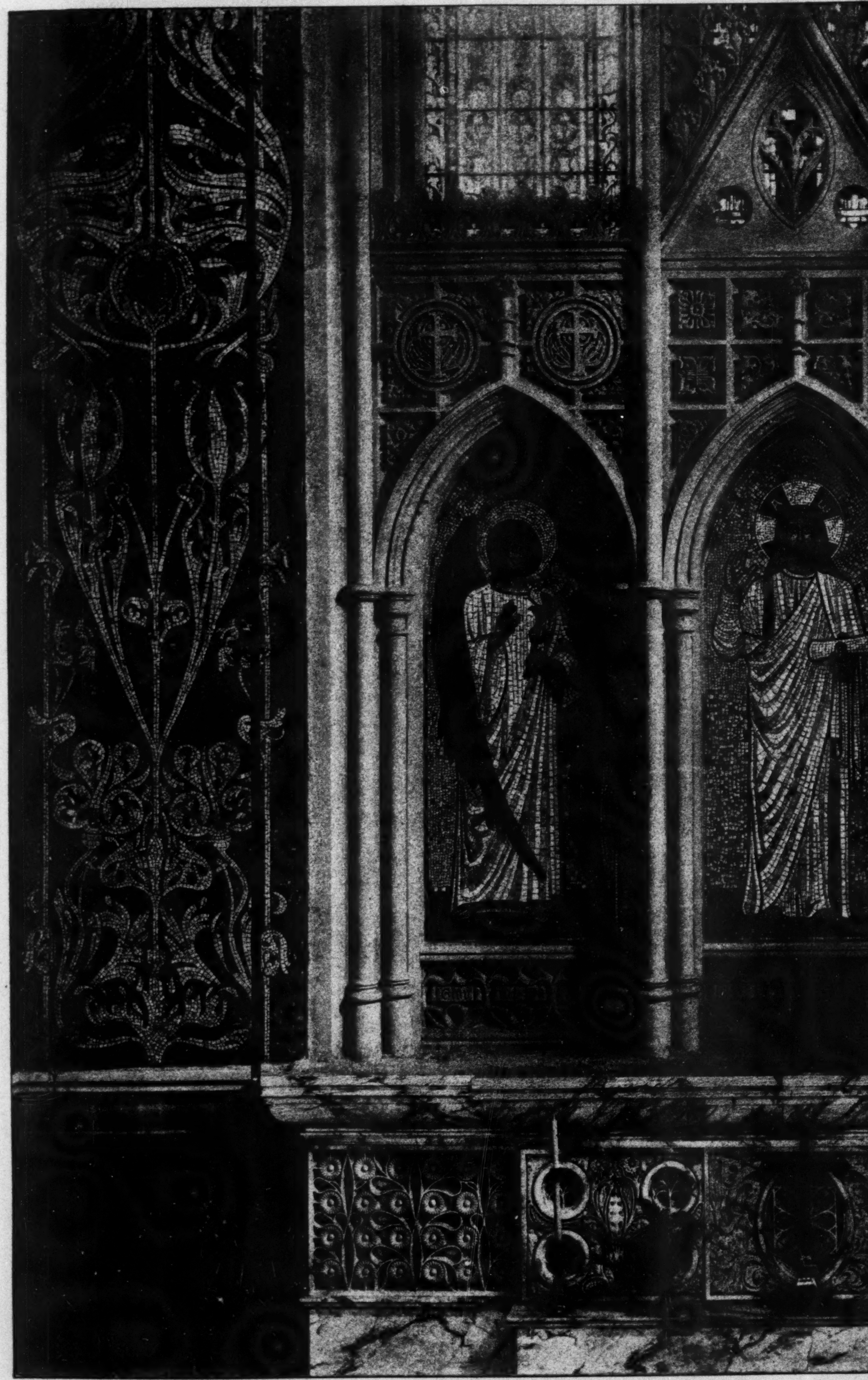




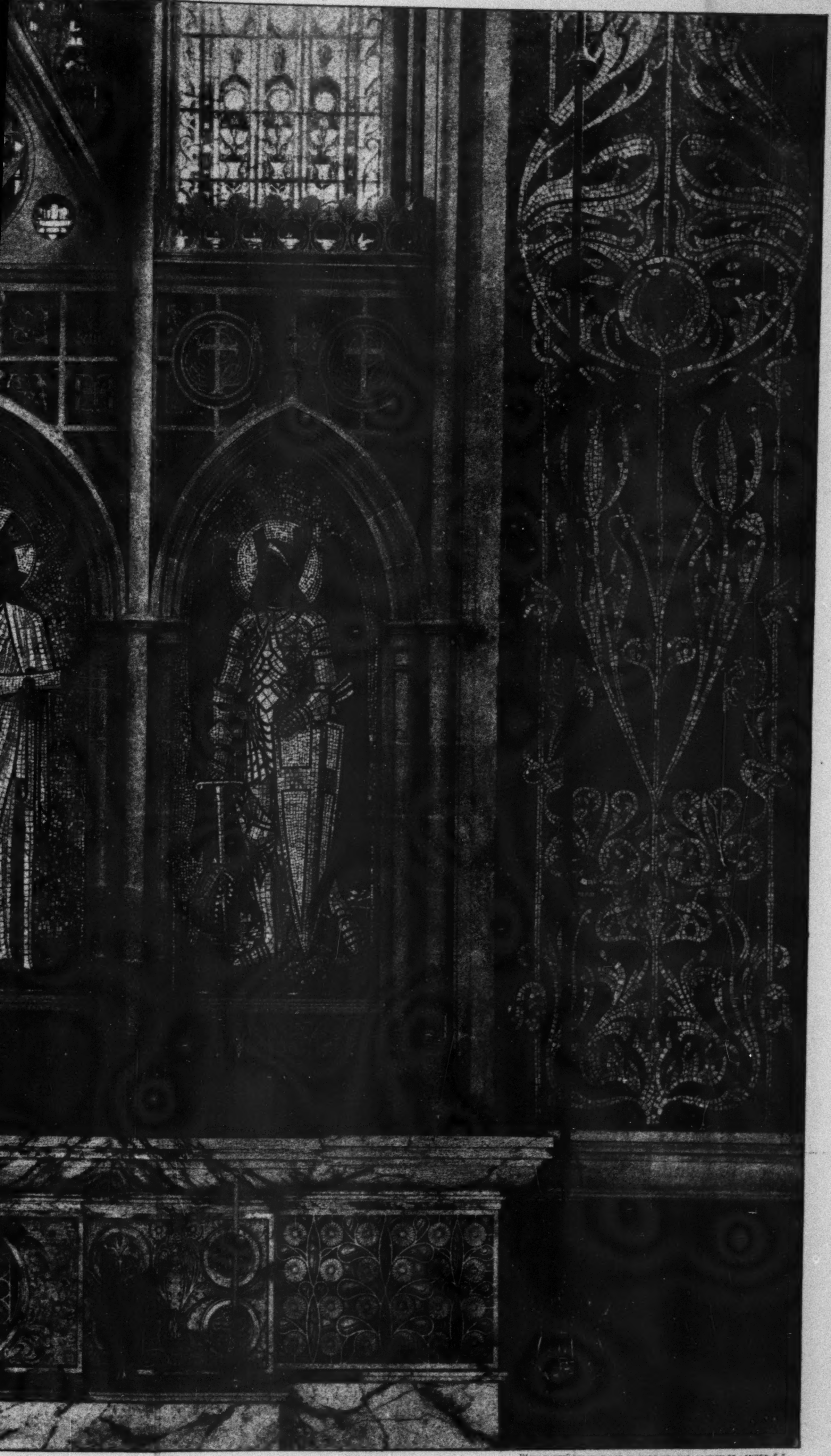
"INK-PHOTO," SPRAGUE & C°. 22, MARTINS LANE, CANNON S^T LONDON, E.C.

ST. GEORGE'S CHURCH, NEWCASTLE-ON-TYNE.—MR. T. R. SPENCE, ARCHITECT.

INTERIOR, SHEWING GENERAL SCHEME OF CHANCEL DECORATION.



DETAILS OF CHANCEL DECORATION, ST. GEORGE'S CHURCH, N



"INK PHOTO", SPRAGUE & CO. 22, MARTINS LANE, CANNON ST. LONDON, E.C.

CH, NEWCASTLE-ON-TYNE.—MR. T. R. SPENCE, ARCHITECT.

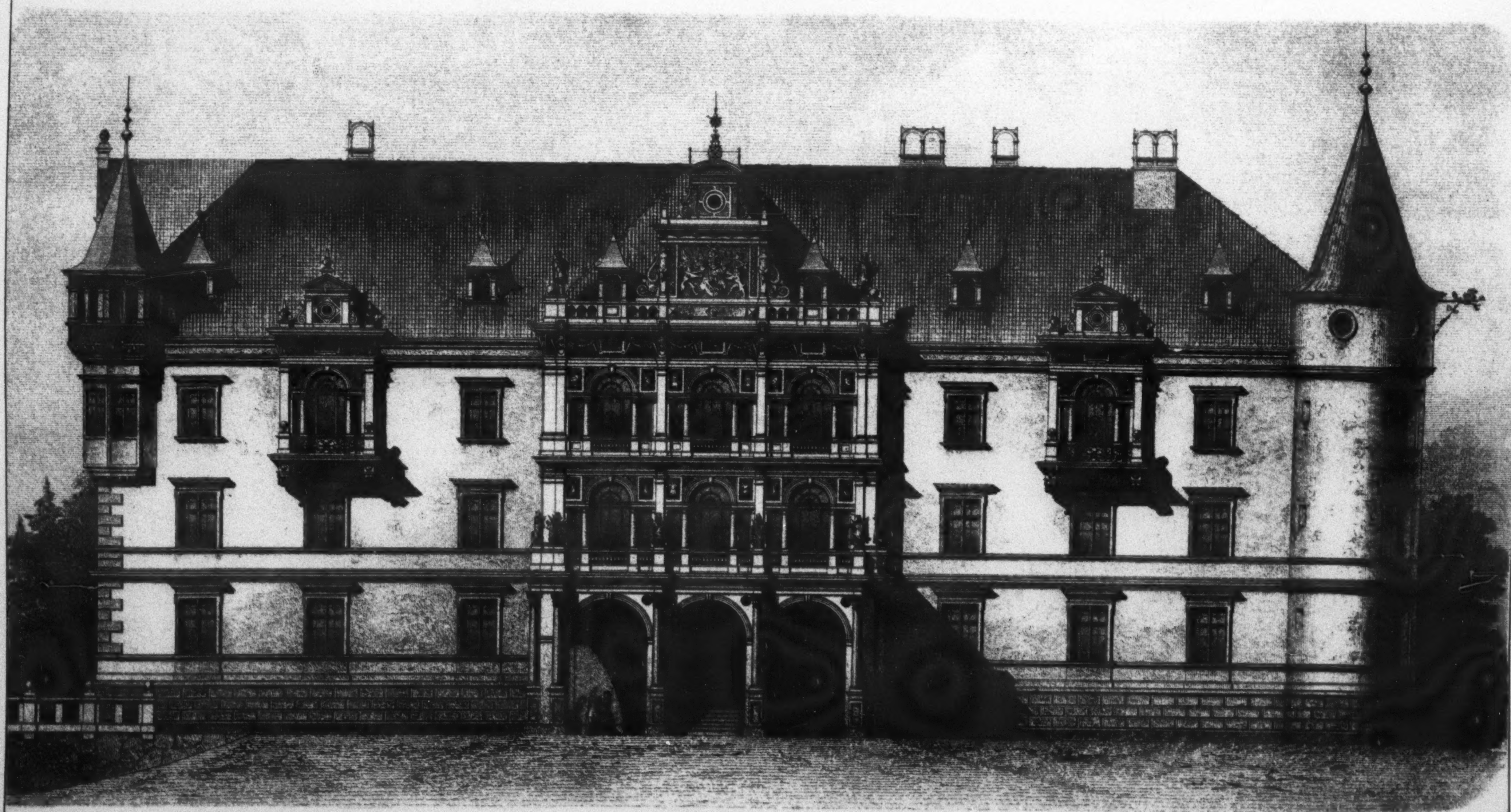
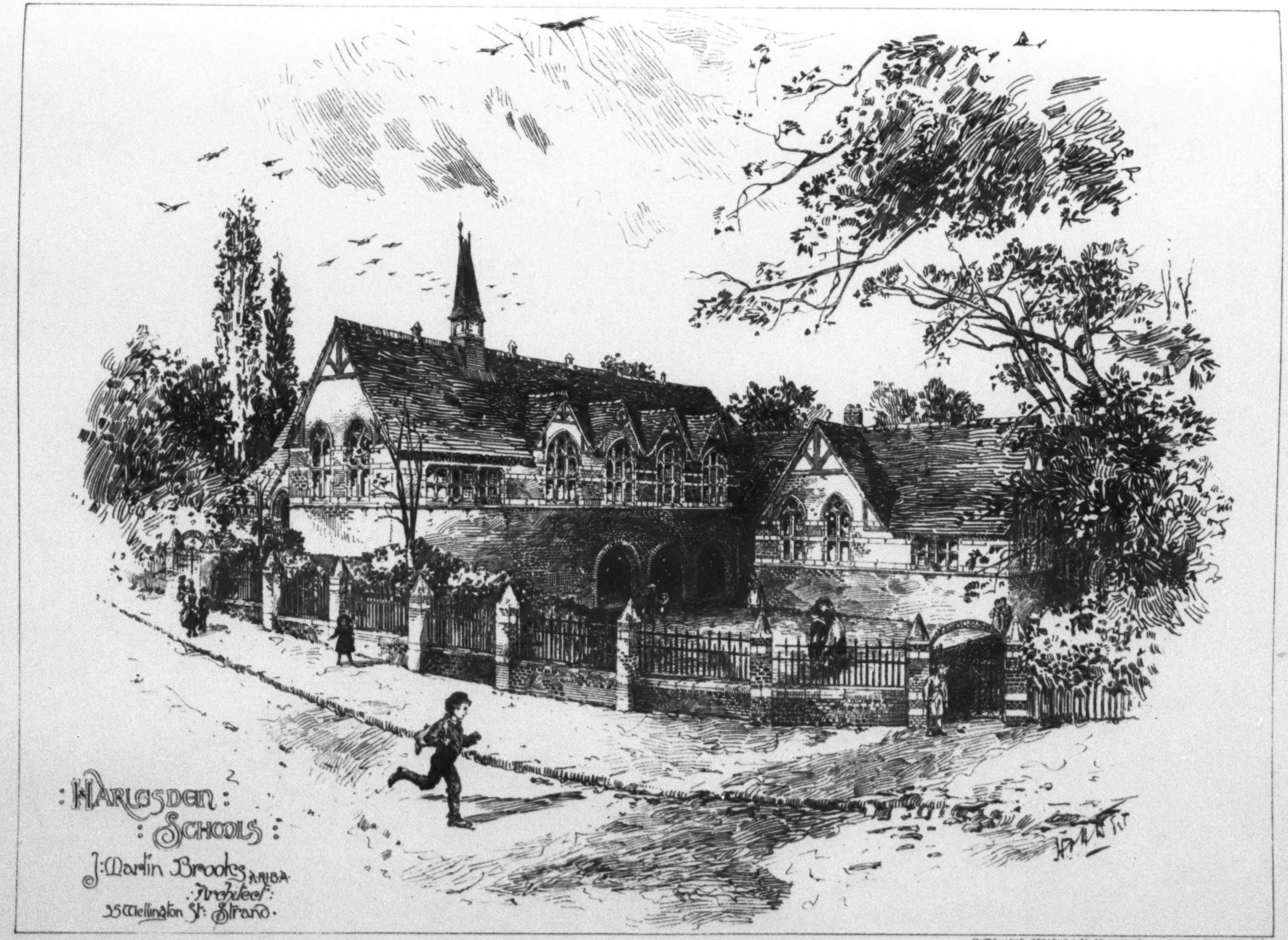


PHOTO-LITHO. SPRAGUE & Cº. 22, MARTINS LANE, CANNON ST. LONDON, E.C.

RESTORED FRONT OF SCHWARZENBERG CASTLE, FRANCONIA.—Herr Theodor Eyrich, Architect.



:Harlesden:
:Schools:

J: Martin Brooks A.R.I.B.A.
:Architect:
35 Wellington St: Strand.

PHOTO-LITHO. SPRAGUE & CO. 22 MARTINS LANE CANNON ST. LONDON E.C.

proportions of Diogenes' tub, he may be ground through a curriculum (I like that word—it is so suggestive of scarifying), he may even pass Institute examinations and develope into a refulgent A.R.I.B.A., sinking into oblivion as a full-fledged Fellow; but unless he is born to it he will never make an *architect*.

Is it because this scheme, with its studio, day-classes, &c., would need far less hard work, that those members approved it? We are always being told of those who learn nothing in an architect's office, whose premiums and years of pupilage are wasted. Then I venture confidently to assert that, in nine cases out of ten, it is entirely their own fault. At the risk of being considered egotistic, I must say that I was educated in an office where my thirst for information was answered by, "Find out." And I had to, and precious little help did I get; but the experience I gained,—by hard work, mind you, and keeping my eyes open,—laid a solid foundation for any superstructure to be raised on it. No, sir; no curriculum will make an architect.

I will not stay now to dwell on the dangers inherent in the professorial system, though I venture to express the opinion that the proposed fees would provide but mediocre talent. If this teaching is to do more than merely instruct in theories, and pad students with a lot of knowledge only to fit them for clerks of works, it requires men in the very front rank of the profession, men whom I take it are better employed in practice for themselves. Those are the men wanted; can they be secured?

To what are our educational methods tending nowadays? Flashy and tricky draughtsmanship, which seems to be superseding the good, steady, old style. Is this a cause to make the Architectural Association believe it is not advancing with the age? Then I am thankful if it is not.

No, Sir: I am still open to conviction that academic training will make architects. Such as have had that training are not particularly distinguished for brilliancy compared to others one can name, who have gained their knowledge by the process known as picking-up and hard work,— witness the testimony of two gentlemen who addressed you a fortnight ago.

We are told, as an argument in favour of change, that there is a diminution in the number of members attending Classes, and that members of these Classes are not reaping the advantages they should,—that the work is perfunctory, &c. Now I take it that mere numerical strength is no criterion to judge the Class-work by, but the proportion of work done to members present and the nature of such work as being true indications. Comparing the sessions 1887-8 and 1888-9, for which I have the full figures, I find that in the former year the attendances in seven Classes numbered 1,200, and the drawings and papers submitted, 991,—*i.e.*, an average of 23 and 19 respectively for each meeting. In the following year the attendances fell to 983, and the papers and drawings to 927, or an average per meeting of nearly 19 and 18 respectively; so that though there were on an average four members less attending, the work is represented by an average of only one less per meeting. And if I include the session 1886-7, omitting the Elementary Class of Design, for which I have not the figures, I obtain the same satisfactory result. It is difficult to compare the figures of last session; but I think they sufficiently bear out my contention. It is stated that the rules enforcing work if attending have been more strictly applied, and this has had the effect of ridding the Classes of some dead weight, and representing them at their true instead of a paper strength. If members are not deriving the benefit they should, why do the reports of the Class secretaries testify to the increasing value of the work, or are we to believe that they present bogus reports and exaggerate the value? If the administration of the Classes has become slack, let us improve it. Perhaps the Classes do now partake of the nature of erratic satellites revolving round the central body. If so, then it is high time that the central body should control them more firmly. At the same time, I suggest that all the Classes should be entirely self-supporting, provide their prizes, and even contribute to the general working expenses of the Architectural Association. That the Classes are too cheap I freely admit, and the subscriptions to most, if not all of them, might well be raised. That this can be successfully done we have recently had an example of, though the increased fee was subsequently reduced on the "split-the-difference" principle.

Now I come to a subject most intimately connected with the past, present, and future of the Architectural Association: I mean its finances. I have made it no secret that much of my antipathy to the educational scheme lay in the fact of its embodying a proposal to raise the subscription,—a proposal based on three main statements, viz., that it would be necessitated by the increased cost of the curriculum; that the Association's income is now insufficient for its requirements, and that additional clerical assistance is urgently needed for the secretary, or that a paid secretary must be appointed. I have dealt with the first, inasmuch as I condemn the scheme supposed to necessitate it; and, with regard to the second, I must beg leave to traverse it somewhat fully.

How the Committee had the courage to make it, after 140*l*. had been spent in 1888-9, and 115*l*. in 1887-8, on the *conversazione* and *soirée*, I leave them to say. If this is a specimen of the way the Architectural Association's funds are dispensed, I do not doubt that the present subscription is inadequate. And apparently the cost of the *conversazione* is increasing, for I find that 94*l*. were absorbed by it last session, and I hear over 100*l*. this session. I do not advocate its discontinuance, but surely it need not be so heavy a burden on our funds. To spend about an eighth part of our income in these frivolities, and then set it up as a plea for raising the subscription, is surely a thankless task. Cannot the cost of the *conversazione* be much less, and the *soirée* either abandoned or made self-supporting? If we have so many who are wedded to this latter meeting, surely they would not object to pay the small charge that would render it independent of the general funds, as the annual dinner very nearly is.

There is, too, an ugly item in the balance-sheet that I have already referred to. I mean the large amount of subscriptions in arrear.

If it is now difficult to collect the subscription, what would it be with a doubled one?

Does this mean that the strength of the Architectural Association is a paper strength? for this amount is not diminishing. Surely some very drastic action is necessary to remove this shackle, instead of condoning these arrears by raising the annual subscription. The income of the Association insufficient! I should think so, with over 200*l*. a year wasted or lost.

But, these drawbacks notwithstanding, we seem to be in a healthy financial condition, with assets amounting to 831*l*.

Now, taking the third statement, I find that 65*l*. is annually devoted to clerical assistance, though what proportion goes to the secretary I cannot say; though, we are informed that he is annually 25*l*. out of pocket—a fact that no one regrets more than I do. My contention, therefore, is that the saving effected in the manner I have indicated should be partly devoted to additional clerical assistance to the secretary rather than the insufficiency of the present sum allotted be used as a lever to raise the subscription.

Further, if we consider the proposal as inseparable from the educational scheme, there is much to be said against it. For students a guinea entrance fee and a guinea annual subscription, in addition to fees for the curriculum, would in many cases be a heavy tax—and for those who have passed the student stage, many of whom are members of the Institute, and who derive no great benefit from the Architectural Association, though giving it the benefit of their moral support and experience, it is too much to expect them to put their hands in their pockets to pay for others' education. And, again, if we consider the proposal as incidental to a continuance of the present method, it is too much to pay a guinea for the privilege of imparting instruction to others. I am told I am unpatriotic for this, forsooth. Surely this Association was not intended for those blessed with long purses.

I always thought it such an admirable institution because it brought its advantages within the reach of all. Why should these advantages be denied to those who may be equally deserving, but who have the misfortune to possess short purses? I must protest against any attempt to make this Association exclusive as a grave error, to be attended with the most disastrous results.

It surely does not follow that because a man happens to have scanty means he ought not to try and become an architect. But there are those who argue thus, deeming it a good thing to get rid of those who either cannot or do not care to pay an extra 10s. 6d. It is idle to say that such a one has no business to enter the profession. These remarks I intend to apply as much to the present as the future, and I do hope this ill-advised proposal will die a natural death.

I have no time to deal with alterations to the Rules, except with the one relating to voting.

It certainly cannot be right to deprive a man of a say in important matters concerning the conducting of the Association simply because he cannot get to the meetings.

The principle of voting for all members by means of ballot papers is admitted in respect to one important matter, viz., the annual election of officers. Then why not in other cases? It ought to be out of the power of a clique—a mere handful, may-be—to dominate the affairs of the Association. This was exemplified last session when half a hundred members out of over 1,100 passed resolutions involving the most radical changes in the working of the Association. I take it that the alteration of this rule as to voting is a very urgent reform, which I hope to see adopted.

Before closing, may I reiterate the able plea put forth a fortnight ago for "craft" education? It requires no words from me to convince you of its importance, and, curriculum or no curriculum, I trust facilities will be speedily afforded.

And now, sir, I have finished my ungrateful task. Ungrateful, because I have to oppose and criticise the views of those whose efforts are tending in the same direction as my own—the lasting good of the Association and the maintenance of its high reputation.

We have an excellent, if somewhat pedantic, motto. May I add to it "Let well alone"?

Mr. Owen Fleming's Paper.

We shall shortly be called upon to give the final vote upon a question of greater importance than any that has yet been considered by the Architectural Association, a question upon which our future depends; and yet I am afraid there are many among the 1,129 members of the Association who, from various causes, have even yet an imperfect appreciation of the nature of the question they are called upon to decide. It has, therefore, seemed to me that I may do some humble service if I try to help those to whom I have referred in their desire to arrive at a sound and accurate judgment by placing before them, as clearly and as logically as I can, the influences which have caused this great movement, proceeding then to consider the adequacy of the scheme proposed by the Committee to meet the alleged needs, and after examining into its financial prospects, endeavour to estimate its ultimate effect upon English architecture.

(*a*) *The Causes of the Educational Movement.*—The influences which have led to the inception of the scheme suggested by the Committee seem to be of two principal kinds, those internal and those external to the Association, although it is not always easy to determine under which of these heads a certain specified influence should be classed.

Perhaps the most important of the internal influences is the great and growing dissatisfaction of the students working in the Classes at the disconnected character and superficiality of the instruction imparted. Although our Visitors deserve our very warmest thanks in coming here, often at great personal inconvenience, to teach their fellow-members what they have learned by hard experience, yet the system under which they labour minimises to a great extent the value of their information. A Visitor is usually totally ignorant of the nature and extent of the teaching previous Visitors have given, and, in consequence, not only is the train of thought in the Class continually being diverted, but frequently most important matters are entirely unconsidered by the class,—an omission which is scarcely compensated for by the fact that frequently the same question is treated by two Visitors. Another feature of the visitorial system which has given rise to the dissatisfaction in the Classes is, that personal interest between the teacher and the taught is almost impossible. A Visitor on taking a Class before him can hardly be expected to discern the characteristics of the individual student in a single evening, and beyond, perhaps, the lectures, there is little that enables him to feel for and with his students; yet without this feeling of personal sympathy, Classes and lectures are, at the best, but cold and dreary functions. To this want of fellow-feeling may, I venture to think, be ascribed the inevitable and rapid dwindling of nearly every Class as the session progresses, and the total lack of that enthusiasm which we rightly look for in classes of young students, and without which good earnest education is impossible. Unfortunately the individual student can do but little to alter what he knows to be wrong. He can grumble to his fellows, and those who mix unreservedly with the younger students will bear me out when I say that he *does* grumble, and then he can do one of two things—continue as best he can in the Classes, or leave them altogether; and I fear there are not a few who choose the latter course. It was only when the students of the two junior construction classes met together one vacation evening, some time ago, and expressed the views of their kind in a petition to the Committee, that the inquiry was ordered which gauged the depth of the feeling, and which ultimately led to the preparation of the education scheme we are now considering.

Another influence which has exercised for some time the minds of the elder workers in the Association is the knowledge that there is no connected train of thought permeating the education system of the Association. If I may venture on a simile, I would liken our course of instruction to an Act of Parliament conceived originally for the needs of another generation, but which has received continued additions and amendments to fit it for new necessities. So it is with our educational system. It is an unconnected concourse of atoms rather than one whole, and, following our simile, as it becomes necessary at certain intervals to thoroughly revise and consolidate an Act of Parliament and its amending Acts, so it has become essential to revise and consolidate our educational scheme, making it thoroughly definite, sequential, and intimately connected together.

Passing now to the chief external influences which render a change necessary, by far the most important is the recent development of the Institute scheme of Examination. Examination is good or bad in direct ratio to the quality of the education that has preceded it. If the education is thorough and complete, the examination takes its proper subsidiary place as a means to an end; but permit the education to flag, or to be hastily or imperfectly imparted, and the examination immediately becomes the end in itself, and wields its usurped power with such intense severity that education soon becomes altogether demoralised, and assumes the form known as "cramming." And, therefore, gentlemen, we must take the greatest care that our education is not hastily or imperfectly imparted.

Another influence may, I think, be found in the tendency in certain quarters to regard the Association and its teaching as a temporary expedient pending the establishment of some new collegiate body. Our ex-President, Mr. Gotch, has stated that he for one should not be satisfied till the functions now fulfilled in a voluntary way by the Association should have devolved upon a body representing the whole profession. More than that, some of the speakers at the Conference of Architects our President referred to went so far as to outline a programme for this new Institution that seemed needed. Is not this some reason for communing with ourselves?

There is yet another influence which it will not be wise to neglect or under-estimate in considering the future of the Architectural Association. The educational institutions known as Polytechnics mostly have a class or classes for the study of Building Construction, at extremely low fees. These classes are generally founded upon the South Kensington lines, and therefore treat of building construction as a complete science in itself, and not as it really is, an integral and inseparable part of the great art of architecture. This training naturally engenders a habit of inartistic thought in the minds of those under its influence, and it is desirable, therefore, to discourage architectural students attending these classes by making our own equally thorough, business-like, and practical, but, in addition, preserving the necessary interdependence between them and their correlative classes or lectures.

Did time permit, it would be an interesting and profitable task to continue our analysis further, but we have, I think, examined the question sufficiently to see that there is an extraordinary combination of influences at work upon the Association at the present time, and that these influences, one and all, are tending to impel us to modify our existing policy; and further, we see that those who hold that the present movement is of an artificial character, or that it is not of sufficient importance to demand our serious attention, are occupying a position which, if persisted in, may result in serious harm to the Association.

(*b*) *The Adequacy of the Committee's Scheme.*—Those who have given a careful and earnest consideration to the education question are probably by this time of the opinion that the one essential feature in any successful amendment scheme must be a thorough revision and expansion of the curriculum. Unless this difficulty is attacked, it will be futile to attempt reform, but a programme which comprises a liberal curriculum, originally well considered, and afterwards well administered, contains in itself the elements of success; and one of the reasons why I am sanguine of the success of our new schemes is that it is firmly based upon a well-thought-out curriculum. It is singular that amongst the storm of criticism aroused by the education proposals, hardly a word has been said against the curriculum. It has been urged, and justly urged, that its scope might be extended so as to include some manual instruction in the various handicrafts, but it is impossible to do everything at once; and the Committee, although alive to the great and growing importance of this subject, hardly felt justified in over-burdening their scheme at first by including such matters as these, entailing as they would a considerable financial outlay.

The Committee, however, apart from this workshop practice, felt it desirable that the curriculum should be complete in itself, with the various individual Classes very intimately connected, working harmoniously together, and forming one whole under one direction and management; and it will be at once seen that, holding these views, they were unable to recommend what is called the "taking advantage of existing institutions." It would be impossible to utilise advantages presented by external institutions without yielding up, to a great extent, the control over the particular class and classes taught elsewhere; and I need hardly say that a system of dual control would be fatal to any ideas of unity and solidarity. Of course we ought to use to our utmost the priceless treasures at South Kensington, Tufton-street, and the British Museum,—far more than we do at present; and if any arrangement could be made whereby we could obtain the occasional use of one of our excellent metropolitan engineering laboratories, it would be altogether good. But to go further than this would, I am convinced, be a fatal mistake.

Having fixed the curriculum and made up our minds that it shall be thoroughly taught, it will be found that the remainder of the scheme follows as a natural sequence. Some criticism has been caused by the number of attendances and amount of work imposed on the students, but it must be remembered that ours is an arduous profession, and entails hard work. Besides, if a student is so fortunately situated as to be able to spare his afternoons for Class-work, he will have no occasion to grumble. It is the hope of many besides myself that day classes may gradually supplant evening classes altogether, as it is not right to make students work from nine in the morning to nine at night. Under existing circumstances, however, the Committee thought it desirable to make the whole curriculum available to evening students. Some exception has also been taken to the payment of teachers, but the objectors could hardly have understood the extent of the proposed curriculum, which it is quite impossible to successfully carry out with voluntary effort. The amount of fees to be paid by the students has also been objected to, but this will be better considered in our third division.

(*c*) *The Financial Prospects of the Scheme.*—The financial questions involved in the proposed scheme are necessarily of some magnitude, but as the figures were only arrived at after careful investigation, and were based upon a sound economic principle, I do not think they can fairly be termed illusory or optimistic.

The leading principle to which I have referred is that the whole of the *current expenses* of education, such as lecturer's fees and materials consumed by the students, should be borne by those for whose benefit they were incurred. It is not fair that those who have passed their student days, with their accompanying expenses, should be taxed for the benefit of the education of their fellows; and it will be found upon consideration that in the Committee's estimate no charge is imposed upon the Association in its corporate capacity for the direct education of its students, each of whom is charged a sufficient fee to cover the expenses of his education. It has been held that this fee of 10*l*. 10s. per annum is excessive, but I do not think this view can be maintained when it is understood that for this sum the student receives no less than eighty lectures and sixty-four evenings of studio instruction from men whose capabilities prove that they deserve to hold the positions of responsibility which they occupy. Nor can it be said that the Committee have been other than extremely cautious in their estimate of numbers. At the present time about one hundred students annually enrol their names as members of the Association, and yet, under the changed conditions, the Committee estimate that the educational system will progress smoothly and harmoniously if only twenty-five students annually take up the whole course. There is little doubt that this is a low estimate, and that the attractions of the new scheme will draw a much larger number; but even if it be not so, it is surely sounder policy to educate thoroughly twenty-five students than to cover with a superficial gloss of knowledge four times that number.

While I have been saying this, however, a question has been probably forming itself in your minds, and it is this: Why, if the Committee declare that no extra funds are wanted for the education of the students, are we asked to double our contributions to the funds of the Association? This is a very pertinent question, but the answer is simple. In most, if not all, other educational institutions no expenses are incurred on account of the buildings. Either heavy endowments or a generous donor have rendered any annual payments upon this score unnecessary; but it must be understood, and the sooner the fact is grappled with the better, that we have neither heavy endowments nor a Samson Fox, and how are we ever to hope to provide the necessary accommodation for our proposed development if we do not supply funds for the purpose? The Committee have placed apart the sum of 250*l*. per annum for extra accommodation, but I fear they have been over sanguine as to the cost of the instruction,—more particularly in the studio,—and that a considerable portion, if not the whole, of this 250*l*. will be absorbed for this purpose. In any case, the cost of the building accommodation is certainly a matter for the Association in its corporate capacity. This accommodation will at first have to be temporary, but ultimately we must be housed in a suitable permanent building, fitted with the necessary studios, lecture theatres, class-rooms, &c., and, I hope, workshops for the handicrafts,—a building, in fact, worthy of the central educational institution of the profession of architecture in the richest country in the world. To attempt to carry out the proposed scheme of education in our two or three little rooms upstairs would be simply to court ridicule; to throw the burden on the shoulders of the young student passing through would be unmanly and unworthy of the Association; to wait till the Institute, or a conference of architects, or the general public, agree to advance the money, would be to convert our scheme into a mirage. So what is to be done? The answer comes straight and direct,—bear the burden ourselves, and let the world see we mean business. Gentlemen, I ask you to give this question your most earnest consideration. You have an opportunity before you of placing once and for all the education of English architects on a firm and sound basis. You have practically in your hands the character of our national architecture of the future, and I do earnestly plead with you not to be influenced by feelings of personal selfishness, but rally to the occasion, as the Association always has rallied to the occasion, and agree, not grudgingly, but gladly and unanimously, to supply the small amount of extra funds you are asked for to enable this great reform to be successfully carried out.

(*d*) *The Ultimate Effect of the Scheme on English Architecture.*—I cannot pretend at this late hour to do much more than briefly indicate the manner in which the proposed scheme will affect the architecture of the future. The architecture of the present we know too well. We have only to stroll down our latest metropolitan improvements,—Shaftesbury-Avenue and Charing Cross-road, or to go for a walk through the outskirts of London, or any country town, to find building after building totally devoid of any architectural interest whatsoever, bad in massing, bad in proportion, bad in construction, bad in sanitation, and an ever-present monument to nineteenth-century ignorance, otherwise called bad taste. Let us not fall into the mistake of supposing that architectural design is a gift, and not obtainable by those who do not possess it. We should consider it an intolerable presumption if a man, ignorant of the elementary laws of harmony, attempted to compose a Cantata, or if a butcher sought to perform a delicate surgical operation; but their jumbles would not be a wit worse than the atrocious compositions that we are daily compelled to witness.

And yet it is hardly fair to blame the architects who continually perpetrate these false quantities. We must rather blame the system which deludes the innocent student into a belief that he can learn, perhaps, the most intricate and far-reaching profession of modern days in a three years' pupilage by having the run of a small practitioner's office. We limit his chance of progress in every possible way, and adopt the very best method that ingenuity can devise for stunting and retarding the growth of the artistic faculties, and yet we are foolish enough to expect our nineteenth-century architecture to improve.

No: if we are really in earnest in our desire to raise up a national school of highly-trained scientific architects, we *must* see that they are properly educated; that their environment is one which will stimulate into healthy growth, instead of stifling the young artistic perception. And if our endeavours to deal in a masterly manner with the great problem of education prove successful, as there is every reason to hope they will, we may then be able to seek some power, not for mere registration or examination, but for a compulsory education which is far more serviceable than a mere statutory hall-marking; and then, and not till then, may we look forward to a national school of architecture as highly skilled and as efficient as is our national school of medicine at the present day.

The briefest recapitulation and I have done. I commenced this address by showing to you how many influences there have been at work in making it essential, if the Association is still to go forward, for it to modify its present scheme of teaching. We examined one by one five important influences, and incidentally referred to others, and, I think, felt that it would not be safe to further postpone the consideration of this vital question. We then considered the nature of the reforms proposed by the Committee, and, after finding that the key to the situation was an amended and expanded curriculum, saw the importance that had been given to this in the Committee's report. Dealing then with other minor matters, we passed to finance, found that the leading financial principle was a thoroughly sound one, and felt that the Committee had been temperate and judicious in their estimates, and that there was every probability of the estimate proving reliable. We saw the extreme necessity of raising our own contributions to ensure the satisfactory execution of the scheme of education, and concluded by endeavouring to estimate the nature of the influence which the new scheme would have upon the future of English architecture.

Mr. H. O. Cresswell proposed a vote of thanks to the authors of the four papers,—gentlemen who from their knowledge of the Association were well qualified to express their views on this subject; but he thought that if each member, after hearing the opinions of others, would carefully consider the question for himself and form his own conclusions, it would be to the advantage of them all when they came to vote upon the new rules, as they would shortly be asked to do. It seemed to him the papers might be divided into two groups,—those which were satisfied with the present state of affairs, and those which were not. Mr. Needham Wilson and Mr. Pite saw a great deal to admire in their present system, and wished to continue it, if not exactly on the present lines, at all events very much on the present lines. Mr. Millard and Mr. Owen Fleming, on the other hand, did not seem to approve of the present system at all, and thought that they ought to have changes of the most radical description. Mr. Wilson had referred to the very large expense which was incurred every year for the *conversazione* and the *soirée*. The Committee were entirely in accord with Mr. Wilson in thinking that the expense was more than they could afford, and the matter had engaged their serious attention for two sessions, as being a constant item in every balance-sheet. He (the speaker) was in favour of the proposition that the expense of at least one of those entertainments should be borne by the members attending it. Mr. Wilson had also referred to the arrears of subscriptions, but he must not imagine that the same arrears were being carried forward for several years,—though the amount was generally about the same,—the truth being that the amount which appeared in each year's balance-sheet under the head of "arrears of subscriptions" merely represented the amount which happened to be due at that time, and probably the majority of those then due were paid off in the next few months.

Mr. E. Doran Webb (Salisbury) seconded the vote of thanks.

Mr. F. R. Farrow said he would like to ask Mr. Needham Wilson whether certain men whom they knew in their profession were architects; because he had said that academic training did not and could not produce architects. Did he consider that M. Charles Garnier, the designer of the Paris Opera House, was an architect? Did he consider that the late Alexander Thomson, of Glasgow, who did so much to show what could be done with Greek architecture in modern work, was an architect? Did he consider that the late H. H. Richardson, of America, who invented an entirely new treatment of Romanesque, was an architect? And did he consider that Mr. Norman Shaw was an architect? All those men had received an academic training.

Mr. Pite suggested that Mr. Farrow's questions were questions for the Institute Examination.

Mr. Farrow thought they were questions which might be put to the Institute very well.

Mr. Wilson said that the four architects whom Mr. Farrow had mentioned were architects despite their academic training.

The Chairman (Mr. Leonard Stokes, President), in putting the vote of thanks to the meeting, said that Mr. Pite had said very rightly that an architect should be an artist first. So he should; but that did not prove that he should necessarily be an ignorant artist.

The vote of thanks having been put and carried unanimously,

Mr. Pite, on behalf of the four readers of papers, briefly replied, and the meeting terminated.

Advanced Class of Construction and Practice.—At the meeting on Wednesday evening Mr. Francis Hooper read a paper on "Artisans' Dwellings," dealing chiefly with the principles governing their arrangement. The discussion was opened at some length by Mr. Owen Fleming, and the points raised by him and Mr. Hooper were deemed to be of such importance that the further discussion was adjourned until November 26, when it is hoped that several representative officials conversant with the question will be present.

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BUILDERS' BENEVOLENT INSTITUTION:

ANNUAL DINNER.

The forty-third anniversary dinner in aid of the funds of this Institution was held on Thursday evening, the 6th inst., at Carpenters' Hall, London Wall. Mr. Wm. Shepherd, the President of the Institution, occupied the chair, and was supported by Mr. George Plucknett, J.P., (Treasurer of the Institution), Mr. Rowland Plumbe, F.R.I.B.A., Mr. T. F. Rider, Mr. B. J. Jacob (Warden of the Carpenters' Company), Mr. McInnes, Mr. Peters, Mr. W. Brass, Mr. Stoner, Mr. A. Ritchie, Mr. C. Bussell, and other friends of the Institution, the company numbering about 150.

The Chairman gave the toast of "Her Majesty the Queen, the Prince of Wales, and the rest of the Royal Family." The Chairman also gave "The Army, Navy, and Reserve Forces," Major Brutton responding for the Army and Navy, and Sergeant Thomas Stirling for the "Reserve Forces."

The Chairman, in proposing the toast of the evening, "Success to the Builders' Benevolent Institution," said it was forty-three years ago since several gentlemen interested in the matter met and laid the foundations of this deserving charity. It was the bounden duty of the successors of those founders to hand it down unimpaired, and to maintain its efficiency. The tree had borne considerable fruit already, for no fewer than 120 male and 68 female pensioners had enjoyed the benefits of the Institution. At the time of the issue of the last report, there were 25 men and 39 women on the roll of the charity. Those who had conducted the Institution had from time to time entertained more ambitious views than they had been able to give effect to, such as the establishment of almshouses; but such schemes had been put aside for want of the necessary funds. To pay the present pensioners about 2,000*l.* was needed yearly, besides the necessary expenses for conducting the charity. The object of the Institution was to help those who had been unsuccessful in business, and it was an astonishing thing that so many connected with the building trade took so little interest in this Institution. The building trade was one which was surrounded with great vicissitudes; in fact, there was hardly another business attended with so many conflicting elements. It was therefore of the utmost importance that the members of the industry in the Metropolis, who had been compelled to give up the struggle, through no fault of their own, should have some other resource than being declared paupers, and being associated for the remainder of their lives with persons who had never tried to make headway. It was strange that those who had always been farthest removed from such a contingency had been the greatest supporters of the Institution. At the same time, he was sorry to say that a large number of firms and individuals connected with the trade, and who were doing a lucrative business in the Metropolis, had never contributed a shilling to the funds of the charity. In this Institution the danger of indiscriminate charity were reduced to a minimum, as every case was personally investigated by the Committee. After some further remarks, the Chairman coupled the toast with the name of Mr. George Plucknett, J.P., the Treasurer.

The toast having been duly honoured,

Mr. Plucknett replied on behalf of the Institution, which he believed was doing its duty according to the intentions and objects of the founders and subscribers. The great drawback was the want of sufficient money to provide for all those who sought its benefits. It was a remarkable fact that in the area which the charity covered there were something like 5,000 builders, besides thousands of others engaged in trades connected with building; yet out of all that number, only 500 subscribed to the Institution. At the same time, the Committee were grateful to the consistent subscribers, and to the present President for his anxiety to help the charity.

Mr. J. W. Duffield gave "The Worshipful Company of Carpenters." The Institution, he said, was very much indebted to the Carpenters' Company for the use of their noble hall, and for the substantial donation they gave to the funds.

Mr. B. J. Jacob (Warden of the Company) replied. The carpenters and builders, he considered, were so closely allied that if one trade suffered the other suffered also. As long as he had a voice in the direction of the Company he would do all he could to aid the Institution.

Mr. T. F. Rider, in a humorous speech, proposed "The Chairman and President." Mr. Shepherd, he added, was a man who was respected by the trade, and who carried out a large amount of work, doing it, at the same time, honestly and well.

The toast was most cordially received, and the Chairman made a suitable reply.

Mr. H. Ashby proposed "The Architects and Surveyors."

Mr. Rowland Plumbe responded, and said that an architect who was properly trained, and knew his business, must look upon his position as being that of one who held the scales between the client and the contractor. He believed that if the relations between architects and builders were carefully considered, there should be no necessity for any disputes.

Mr. Arding also replied on behalf of the Surveyors.

The remaining toast, viz., "The Vice-Presidents, Committee, and Stewards," was proposed by Mr. A. Richards.

In the course of the evening subscriptions and donations to the amount of 827*l.* were announced, of which sum 615*l.* appeared in the President's list.

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A SCARIFIER FOR MACADAMISED ROADS.

Many of our readers will no doubt have lately seen the macadam scarifier, which has recently been working on the Victoria Embankment, and in Hyde Park and various other places in the Metropolis. This appliance undoubtedly possesses several advantages over the old system of breaking up our roads by hand-labour. The inventor of the scarifier (which when in use is drawn by an ordinary 6-horse power traction engine) claims for it that the work can be done at less than half the cost of the old method by pick-axe, even when done in the most economical manner. But this work, as must often have been observed, is generally done by old and infirm men far too weak for work so laborious, and who are not able to pick up the road to a uniform depth. By the use of this machine the depth can be made from 1½in. to 3in., as required, by working a single and simple part of the apparatus, which raises or lowers the steel tines which plough up the road. By its use, too, every stone is completely shifted, although there is no danger of the stones flying about, as so commonly happens in the old method of hand "picking," with the result of leading to accidents and expense.

The scarifier is complete in itself, and does the work in far less time than is possible by manual labour. We understand that it will do from 2,000 to 2,500 superficial yards in an ordinary day of ten hours. It can also be used by night equally as well as in the daytime,—a great advantage in our busy streets, which, when this work is carried out, are too oftentimes closed to the traffic longer than necessary. The inventor and patentee is Mr. G. G. Rutty, of Bromley-by-Bow, London, a well-known contractor for paviors' and masons' work. We witnessed the machine at work in High-street, Poplar, on Monday last, and the ease and celerity with which it accomplished its work appears to fully justify all that is claimed for it.

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Correspondence.

To the Editor of THE BUILDER.

CEMENT TESTS.

SIR,—Mr. Roechling's letter in your issue of the 1st inst. [p. 348], giving a translation of the German standard rules for the delivery and testing of cement, calls for some notice, for although these regulations are, no doubt, suitable for the country in which they were framed, they are certainly not applicable to our practice here, and if generally adopted would undoubtedly lead to many difficulties and misunderstandings.

With respect to the part relating to the packing and delivery—it is purely a commercial matter, and I have nothing to say either for or against it. Here, a sack of cement is supposed to weigh 200 lbs., and we have, as a rule, two sized barrels, one weighing 400 lbs. gross, and the other 400 lbs. nett, *i.e.*, about 427 lbs. gross. The barrel trade is entirely a shipping trade, and the size of the barrel depends on the market to which the cement is consigned.

I would, however, more particularly draw attention to the test for tensile strength, and the test for "blowing,"—*i.e.*, the determination of the soundness of the cement.

If only for three reasons, the sand test is an impracticable test—1. a standard sand has to be procured; the late Mr. Grant, who was a great believer in this test, found a sand at Leighton Buzzard which answers the purpose very well, and on the rare occasions when I have to make a sand test, I use it, but it is not always uniform in size and form of grain, and has to be very carefully washed and sifted in my testing-room before being used; and, furthermore, it does not bear the official stamp, as does the standard sand, or grit, which is supplied by the Government laboratory at Berlin. Another and greater difficulty is that not one man in ten, who is otherwise a good cement-gauger, can satisfactorily gauge a sand briquette; there is a knack in manipulation which is difficult, and to some impossible, to acquire, and hence results by different operators with the same cement do not agree, and but little reliance can be placed on them. But the third and most serious objection is, that we cannot wait four weeks to know the constructive value of a cement. Whether it be for shipment or for use in a contract here, it is only on rare occasions that the cement can be allowed to remain in bulk for the four weeks during which the test is being carried out, and which means actually five or six weeks, before it is either accepted or rejected.

The German test for "blowing," *i.e.*, soundness or freedom from expansion or contraction, I am obliged to say, is an absolutely delusive one. I tried it for quite a year in my testing-room with several hundred samples of different cements, and obtained no satisfactory and decided results from it. My reason for giving this test such a severe trial was that some years previously I devised a test for the same purpose, but, as the German one seemed simpler, I was prepared to abandon mine if the German test gave satisfactory results. It is some ten years since I first devised this test, and some six years since I began to make it public, and all I can say about it is that during the whole of that time it has never once deceived me. I enclose a few notes on cement testing and sampling which gives a description of it, and for further particulars I may refer to the new edition of "Portland Cement for Users," published by Messrs. Crosby Lockwood & Co. I may add that there is no patent in it, and anybody and everybody is free to use it.

I have always maintained that if a cement proved to be sound, and satisfied the general conditions of a cement when gauged with water, it was in ninety-nine cases out of a hundred strong enough for the work for which it was intended to be used, and my practice is to test every sample of cement immediately it comes into my testing-room for soundness. I can then, if necessary, in the short space of twenty-four hours, advise definitely whether or no the cement may be safely used; and everybody,—engineer, contractor, and cement-maker, —will admit that this is an advantage which cannot be over-estimated.

I may add that I received a copy of the German regulations some three years ago—*i.e.*, on their publication, and had I found any part of them worthy of imitation I should have felt it my duty to have made that part public; but, as I have before stated, I am not of opinion that these regulations and tests are best suited to our practice here. We have no governing body to regulate the quality and properties of the material we buy and sell as cement. Years ago I tried to induce the cement-makers to agree to a standard test, but I failed lamentably, and perhaps it is as well that I did. But, though not supporting these German regulations and tests, I am quite prepared to admit that the Germans have done a great deal for the cement industry, and by individually carrying out a vast number of experiments have induced and fostered an improved manufacture, but they have to a very great extent stultified the value of their experiments and tests by a too strict and almost bigoted adherence to the purely scientific and theoretical side of the subject. HENRY FAIJA, M.Inst.C.E.

November 3, 1890.

SIR,—With regard to Mr. Roechling's letter in the *Builder* for November 1 [p. 348], giving the Prussian standard rules for cement testing, the latter would appear to be almost identical with those laid down by the Metropolitan Board of Works in 1886, and, I believe, continued by the London County Council. The fineness and residue are exactly the same, but the Prussian test is 227 lbs. tensile strain, as against the Board of Works' 250 lbs., the relative proportions of sand, and cement, and age being alike. The rules of the Prussian authorities as to "blowing" are those recommended by Mr. Grant, Mr. Faija, and others, years since, so that possibly the Prussian standard tests of 1887 were adapted from the Metropolitan Board of Works' tests of 1886. At any rate, the latter were the outcome of many years' experience and many thousands of experiments, and might well be recognised as a uniform standard for high-class cement.

It is worth noting that Mr. Grant, as engineer for the Board of Works, made a large number of experiments, in the years 1861 and 1862, with cement mixed in various proportions with sand, and the average of many tests subject to similar conditions to those stipulated by the Prussian authorities, viz., 1 of cement to 3 of sand, only gave, in 27 or 28 days, a tensile strain of 108 lbs. on a sectional area of 2¼ in., the requirements now are 227 to 250 lbs. per superficial inch.

The Forth Bridge contract stipulated that 1 part of cement and 3 parts of sand should withstand a tensile strain of 170 lbs. per in. in 24 hours; the Metropolitan Board of Works' test in 1859 only required a tensile strain of 178 lbs. on neat cement of the same age. This remarkable increase of the capacity of cement to amalgamate with sand to form mortar, suggests whether the time has not arrived when for ordinary building purposes it may not take the place of lime. As a matter of fact, measured by strength, Portland cement is now cheaper than lime, and although specifications for building contracts, as a rule, I believe, require the same amount of sand to cement as formerly, a very much larger proportion of sand could be used, and yet make a first-class mortar. THOMAS POTTER.

Alresford.

BETHNAL GREEN SLUMS.

SIR,—Apropos of the necessary remodelling of the neighbourhood of Columbia- and Virginia-roads by the clearing out of so much that the continuation of these roads into the High-street of Shoreditch could be effected at a very small cost, and as no more favourable opportunity than the present can occur for about another century, I would like to put the question publicly, through your valuable medium, What are the local authorities about to allow the new* dwellings (now about to be erected) to have such a large frontage on this route, and not to set back, at least, 20 ft. from centre of the road? In our suburbs,—often laughed at on account of their insignificance,—such would not be tolerated (not even for a local somebody), as they would pay compensation if it could not be done without it. Surely there is something wrong, as everyone knows by this time. Given good wide thoroughfares, and much of the objectionable character these neighbourhoods sink into will be changed. Here is an opportunity: about three-quarters of a mile, mostly of good width, but cramped at each end, and now no time to be lost. Whoever heard of such a thing? A big block, perhaps five or six floors high, and yet the roadway at one end, speaking without measuring, I have no hesitation in saying, including footpaths, under 20 ft. wide, the other end perhaps 5 ft. wider, though I doubt if 25 ft. True, there is a thoroughfare of 30 ft. or 35 ft. running into this at the wider end, but what is that in, perhaps, 400 ft. of frontage?

I trust the publicity of this will find out the way to not only initiate, but to complete, the whole of this much-needed improvement.

A CONSTANT READER.

"DEATH IN THE VENTILATOR."

SIR,—I have pleasure in endorsing the remarks of Mr. Buchan in your paper of last week [p. 372] with respect to the fixing of a mechanical ventilator provided with a balanced valve so constructed as to be closed by a moderate blast of wind at top of soil-pipe. I, too, must denounce this as being quite against all that has been done to prevent syphonage of the w.c. traps. In the first place, it would soon get out of order, and, provided it got fixed open to its full extent, so much the better. A moderate blast of wind would partially close the valve, and the sucking-action of the discharge of a w.c. at the time would finish it, resulting, most probably, in the syphonage of the w.c. trap, even were the latter ventilated. Those who fix these will have the pleasure of removing them at no very distant date—at least, I hope so. MOSS FLOWER.

Bristol.

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The Student's Column.

HOT-WATER SUPPLY FOR BATHS, LAVATORIES, &c.—XIX.

IMPROVED SYSTEMS (*continued*)—COILS AND COIL SERVICES.

AN instance of a descent in circulating pipes to which no objection can be raised is when it becomes desirable to carry a returned draw-off service close to the tap. It has been the general practice when returning draw-off services to connect the returned portion at the point where the pipe turns down to the tap, as fig. 47, leaving some 6 or 8 ft. of single pipe in which the water lies stagnant; this in many instances is not very objectionable, but, should it be desired, the pipe may be returned from a point close to the tap as fig. 48, and the circulation under this arrangement will be very good; or where the pipe rises to the tap, as fig. 49, the circulation will be found quite perfect. In the case of a lavatory basin, it is always a satisfaction to find hot water issuing *immediately* a tap is opened; the majority of these have but small taps, and annoyance is always experienced here if any cold water has to be drawn off before the hot arrives.

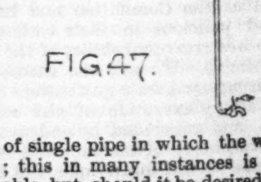

FIG.47.

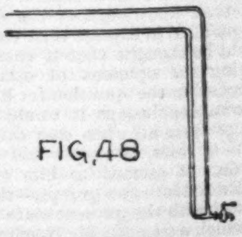

FIG.48

As a general rule, there is only one objection to dipping the circulating pipes (provided the dip is not a very deep one), which is, that it probably leaves some portion of the pipes as at fig. 46 (see p. 349, *ante*), and the dislodgment of the confined air will give in-

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* Guinness's dwellings.

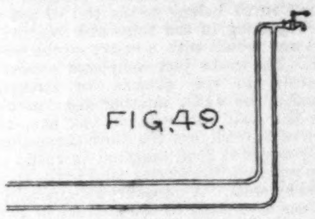
FIG.49.

finite trouble, and, on this account, any plan of carrying the pipes in irregular directions requires considerable thought before being put in practice, for it must be borne in mind that a collection of air in pipes will quite impair the efficiency of the apparatus and bring about noises and erratic results. In a *heating* apparatus, air-cocks for releasing confined or collected air figure very prominently, as they require fairly regular use; but a heating system is commonly under the care of some one who has a knowledge of the air-cocks and their use, which cannot be looked for from the maidservants in an ordinary residence.

In completing this paper, there is a feature in the cylinder system which has not been mentioned before, but which is of considerable importance in rendering general good results, and this is the insertion of a stop-cock in the secondary return, which should be closed at night to stop the circulation and so retain the store of warm water in the cylinder (which is usually in a warm position), and which can then be relied upon to provide a tepid bath before the fire is lighted in the morning. If the upper circulation is not stopped, we have the water travelling around the house dissipating its heat in all directions, to no purpose, as the circulation will not cease of its own accord until the water is cold.

The best position for this tap is in the kitchen or somewhere where it can be easily used, as fig. 50; no harm can ensue, as, should it be left closed, it only converts the secondary flow into an ordinary single-rising main, and the effect is that a quantity of cold water would have to be drawn before hot was obtained in the morning. If the cock has to be put near a ceiling it can have a cross-key with cords or chains, as fig. 51.

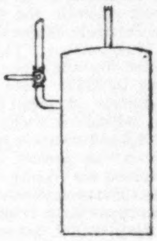
FIG 50

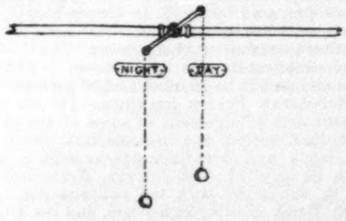

FIG.51.

COILS AND COIL SERVICES.

The attachment of a small quantity of hot-water pipes or a coil or radiator to a supply apparatus is much in vogue, but it is really not a practice that can be recommended very strongly unless special circumstances render it necessary. In the first place, a coil service and a supply service for draw-off purposes are directly at variance with each other in the objects that they are intended to attain, as with the former the sole aim and purpose is to radiate, dissipate, and transfer the heat from the water to the air; whereas with the latter every effort is usually made to conserve the heat within the pipes, so that it may all be had with the water from the taps, and not to diffuse it with a proportionate reduction in the temperature of the water; consequently, if a heating appliance of any description is connected on to an existing apparatus, a reduction in the quantity or the temperature of the hot water must be anticipated; or, if we include such an appliance in a new apparatus, we must, of course, put a boiler of a power more than sufficient for the taps only.

It is very commonly desired to heat a small greenhouse or conservatory by one or two pipes heated from the kitchen boiler, and this arrangement is just as commonly carried into effect; but it has a most fatal objection, which is that when the heat is most needed, in the early morning hours, the fire is out and the water cool. This objection is not so noticeable with a coil in the house, as the loss of heat brings about no serious harm and no particular inconvenience at night, when the occupants are at rest; but, at the same time, if the coil was in connexion with a stove that kept the fire going all night, a good deal of comfort would be felt from the warm temperature in the early morning, when the cold is greatest and felt the most.

If the kitchen range has a convertible open and close fire, this goes far towards overcoming the difficulty just referred to, as an open fire, if fed the last thing at night, will frequently remain burning until morning, and, although the combustion is slow, it keeps up the temperature very well, as but a small fire will do this when no water is being drawn off.

In concluding the objections to the arrangement now under discussion, it should be mentioned that a boiler which is sufficiently powerful to give a good supply of hot water and satisfactorily work the heating appliance in winter will probably prove a source of worry in the summer by furiously overdoing its work, as the coil would be then shut off and the demand for hot water considerably diminished.

The oldest form of coil is that having box ends, as, in fact, many are made now, but the joints between the pipes and the box ends were made and secured by a rust, or a composition joint, which was a great source of trouble to make up, and these rigid joints did not do very well, as the expansion and contraction brought about occasional leakages, and, under the best of circumstances, the erection was abnormally ugly, requiring an expensive casing solely to hide it. This casing itself introduced two obstacles to the success of the coil, the first being that it obstructed and absorbed a deal of heat; and, secondly, and worse, it made it difficult to keep the coil clean, and it is surprising what a preventative of heat-radiation a coating of dust is, it being composed chiefly of poor conductors of heat (minute particles of wool, fibre, straw-like materials, and stone grit).

More recently two or three forms of expansive joints (the packing medium being a rubber ring or collar) have come into use, and are a decided improvement, as, although costing a little more, the joint does not give way, and the labour of erection is reduced to a minimum. Fig. 52 in section is one of the best-known of the joints as applied to two lengths of pipe. It will be noticed that the pipes may have perfectly plain ends; no sockets being needed, and if the pipe-ends are a little rough or irregular a good joint can still be made. Fig. 53 shows a coil made up with this joint, connecting the pipes to the box ends.

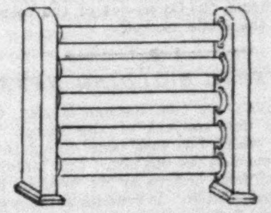
FIG.52

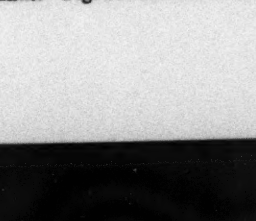
FIG.53.

XX.

COILS AND COIL SERVICES (*continued*).

A MORE recent introduction, which is very suitable for houses, as no casing or other device for hiding it is necessary, is termed a "radiator" (fig. 54). These are now being made in various designs and forms by different manufacturers, and as they can be treated to match the surrounding decorations their appearance need not be objectionable.

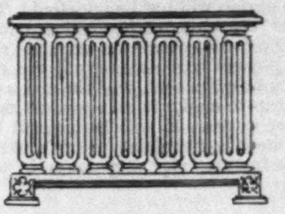
FIG.54.

The majority of these radiators have the pipes in a vertical position, and an object retained in view by the manufacturers is to give as large a heating surface as possible with the smallest quantity of water, so that they can be heated up quickly, although, of course, they as quickly grow cold when the fire is out; but this is not a serious matter in a residence where the kitchen fire is always alight from 7 a.m. to 10.30 p.m. The small quantity of water is an advantage, as a coil of ordinary pipes which holds so much water is like attaching a second reservoir to an apparatus, and it greatly imperils the efficiency of the boiler, and takes a great deal of time to heat.

As a general rule, it may be considered that two medium-sized radiators is as much as ever should be attached to a domestic supply apparatus; to attach more than this will only be at the risk of rendering the supply of hot water at the taps inadequate in temperature, and it is only when a boiler is more powerful than is necessary for the supply of water drawn off that this can be done.

There has been some controversy as to which gives the best results,—a coil or radiator of vertical pipes, or of horizontal pipes. From experiments made it is found that the water will circulate through each at about the same speed, but with horizontal pipes there will be found a difference in temperature between the top and bottom pipes, whereas with the vertical pipes the circulation is regular through all pipes, and it is quite the exception for one pipe to heat differently to the others, supposing no obstruction exists; but it has to be pointed out that with vertical pipes, if air accumulates, preventing the pipes filling right up, the circulation will be checked, but at the same time this only indicates that the air-cock wants opening, which instantly remedies the trouble. A strong point in favour of vertical pipe-coils is that they do not get coated with dust so quickly.

There are various ways of connecting these appliances to the circulating pipes; some on to the flow-pipe only, some on to the return (the secondary return to a cylinder, not the return of a tank system), and some on to both flow and return.

To commence with the first arrangement, fig. 55 illustrates a radiator connected to a flow-pipe with a stop-cock beneath to divert the whole or part of the water through the coil as required; if there were no stop-cock at this point the apparatus would still heat, but not so rapidly; and it is usually found desirable to have the cock so that it can be "set" to permit of the coil having a fair share of the circulation without interfering seriously with the house

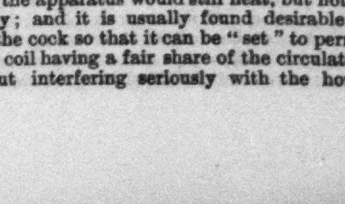
FIG.55

supply. The setting of the cock is necessary, as requirements differ so greatly, some people needing hot water at a later hour or in less quantity than others, or considering the coil of the most importance; and in some instances the coil is closed off while the cylinder or tank is being heated up, and so on. If desired, the cock beneath can be quite closed, so that all the water has to pass through the coil, which will heat it up quickly, but it must not be expected to have hot water at the taps past the coil so quickly in the morning as when this tap is partially opened; in many cases, however, it can be done, and although the flow of water has to first rise up to the coil and then descend, the circulation will not be impaired. The stop-cocks at the sides of the coil are for wholly stopping off the circulation when not required; two stop-cocks are necessary if the coil is required to be quite cold, or if the coil is provided with a tap to empty it and prevent its rusting when not in use. It will be noticed that the arrangement just explained introduces an objectionable feature, viz., stop-cocks in the flow-pipe.

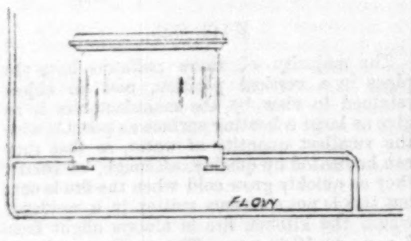

FIG. 56

Sometimes it can be arranged as at fig. 56, by which a little better results are obtained, as the flow-pipe has not to descend; but the gain is so slight that it is not worth while going to a great trouble to effect it

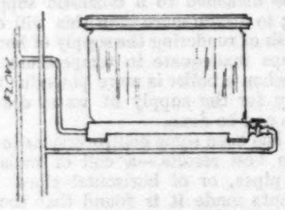

FIG. 57

When it is desired to connect the coil with both flow and return, it is done in a similar way to a returned draw-off service, as at fig. 57 or fig. 58, with stop-cocks, as shown, and this arrangement has the advantage of having no cocks in the primary flow or return services.

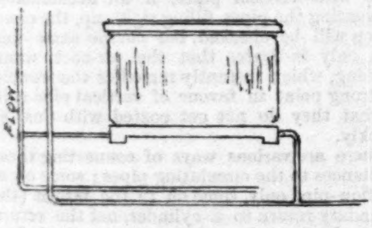

FIG. 58

If a coil is attached to the secondary return of a cylinder apparatus, it can be arranged as at fig. 59, but in this case the cocks can be adjusted to allow the whole of the current through the coil, supposing there are no draw-off taps past it,—*i.e.*, between the coil and the cylinder,—at E, for instance.

It is usually found that if *two* stop-cocks are not provided for shutting off the coil (one in the pipe *to* it, and one in the pipe *from* it) the coil will not remain quite cold, and, although its temperature will not be high, the warmth is usually objected to in the hot summer months, when the least artificial heat is considered intolerable. It is found in the majority of cases that one stop-cock, although closed, does not wholly prevent a feeble circulation setting in up the open pipe, although this is generally aggravated by the stop-cock being placed in the wrong position. If the cock is placed in the pipe that *leaves* the coil, as shown at fig. 57, the coil will not heat, except to a trifling extent, as we have to remember that, although a slow circulation will set in *up* a single pipe, it is next to impossible for it to take place in a directly descending one.

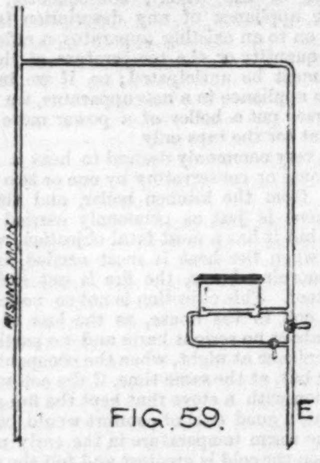

FIG. 59.

The radiators referred to are generally supplied by the makers completely fitted, so that the connexion of flow and return pipes is all that is needed. This makes an agreeable improvement over the old pattern coils, which had to have all the pipes fitted and jointed on the premises. Of course, this convenience is paid for in the increased cost of radiators over plain coils.

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SURVEYORSHIPS.

SOUTHAMPTON.—Mr. A. D. Greatorex, of the City Surveyor's office, Manchester, has been appointed Assistant Borough Surveyor of Southampton. Mr. Greatorex served his articles under Mr. J. Price, Assoc. M. Inst. C.E., Engineer and Surveyor to the Toxteth Park Local Board, near Liverpool, and for the past four years has been hon. sec. of the Association of the Manchester Students of the Institution of Civil Engineers.

◆

OBITUARY.

MR. J. P. HOLDEN.—The death of Mr. James Platt Holden is announced. One of the oldest architects and surveyors in Manchester, he commenced practice in 1838, with his brother, Mr. Isaac Holden (who died in 1884). Born in Liverpool in August, 1806, he served his time and worked as a journeyman bricksetter; then emigrated to America, where he first worked as journeyman; then as builder; and, ultimately, as architect and surveyor. Returning to England in 1838, Messrs. Isaac & J. P. Holden continued practice in Manchester until 1852, when they separated by mutual consent, each continuing on his own account. Mr. James P. Holden held the office of Surveyor to the Dean and Chapter for something like thirty-five years, and of architect to the Cathedral for about twenty-eight years, during which time a considerable portion of the fabric was restored, and the new tower rebuilt. Retiring in 1879, he still retained his connexion with the profession through the Manchester Society of Architects, of which he was one of the original members. He was also one of the oldest members of the Literary and Philosophical Society of Manchester. He has passed away at the ripe age of eighty-five years, and will be remembered by many friends for his kindly disposition and his readiness to assist others in all matters within his power. His nephew, Mr. John Holden, is a member of Council of the Institute.—*R.I.B.A. Journal.*

MR. WILLIAM STEWART.—The death is announced of Mr. William Stewart, the Town Surveyor of Rugby. Mr. Stewart, who was articled to a Rugby architect, succeeded Mr. J. Palmer, the present Surveyor of Malvern, in the office about sixteen years ago. According to the *Birmingham Gazette*, he was thoroughly in the confidence of the Board, and during his surveyorship had designed and carried out several important works—notably, the surface-drainage scheme, the laying-out of the recreation-ground and the cattle-market.

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GENERAL BUILDING NEWS.

NEW CONVENT OF THE SACRED HEART, COOKSTOWN.—The new convent of the Sacred Heart, Cookstown, which has just been completed, was formally opened on the 6th inst. This building has been erected from designs by Mr. William Hague, Dawson-street, Dublin. It consists of three stories. On the second floor are the cells or sleeping apartments of the community. The lavatory, bathrooms, and hot-water arrangements, together with the electric bells, have been put up by Mr. W. J. Scott. The contract for the convent has been completed by Messrs. McNally & M'Kee, Cookstown.

CHURCH OF ST. MARY MAGDALENE, SANDRINGHAM.—The reopening on the 9th inst., after enlargement, of the Church of St. Mary Magdalene, Sandringham, was attended by the Prince and Princess of Wales. The earliest portions of Sandringham Church belong to the end of the twelfth or the beginning of the thirteenth century. The chancel was rebuilt with a vestry on the north side in 1857. The works just completed consist of improvements in the chancel by strengthening and raising the walls, altering the windows, replacing the deal roof with an oak one, and the erection of a porch over the south chancel door. A specially-designed floor, executed in rustic mosaic, has also replaced the former tiles in the spaces not occupied by seats. A necessary enlargement of the church has been made by the addition of two small transepts, and a new pulpit of carved oak on a stone base takes the place of a stone one put up when the chancel was rebuilt. A rearrangement of the choir seats and the font, a new warming apparatus, and several necessary general repairs complete the work, which has been carried out from the designs and under the direction of Sir Arthur Blomfield.

ST. JAMES'S CHURCH, TREDEGAR.—The Bishop of Llandaff on the 6th inst. consecrated a new church at Georgetown, Tredegar. The church, which will accommodate 500 persons, is in the Early English style of architecture. The plans were prepared and won in competition by Messrs. James & Morgan, of Cardiff, and the work has been carried out by Mr. Edward Morgan, of Tredegar, whose contract price was 2,200*l.* The building is divided into nave and aisles by an arcade of arches, supported on Corsham Bath stone columns, with moulded caps and bases, clearstory windows being inserted over the arches. The clergy vestry is situated on the north side, and the organ-chamber on the south side, of the chancel. The elevations are faced externally with blue Bedwellty stone, with grey Forest of Dean stone dressings to the doorways, windows, copings, &c. The west end gable is surmounted by a bell-cot, worked out of Forest stone. The roofs are covered with blue and purple slates in alternate courses. Internally the roofs are open to the ridge, and are constructed of pitch-pine. The seating is also of pitch-pine. The pulpit is of Corsham stone and pitch-pine, moulded and carved. The font is of Caen stone, moulded and carved. Both were executed by Mr. Wormleighton, sculptor, of Cardiff.

MAIDSTONE CHURCH INSTITUTE.—The formal opening of a new hall, in connexion with the Maidstone Church Institute, to be called the Hollingworth Hall, took place on the 6th inst. The new portion of the Institute is situate at the rear of the building in Union-street. The whole of the basement is occupied by the gymnasium, which measures 51 ft. long by 28 ft. wide, and is paved with wood block paving. A small dressing-room, with lavatory, &c., adjoins it. The ground floor contains three well-lighted rooms, approached by a corridor leading from the present entrance hall. These rooms are allotted for library, senior's room, and recreation-room. The recreation-room measures 30 ft. by 20 ft. The upper floor is occupied by the new Hollingworth Hall, which measures 51 ft. by 28 ft., and will seat 300 people. A permanent platform occupies the further end of the hall, and a small retiring-room is provided. An iron external staircase is also provided. The building is warmed throughout by hot water. The building generally is in accordance with the plans of the late Mr. E. W. Stephens, F.R.I.B.A., who was the architect for the first portion. The contractors were Messrs. G. E. Wallis & Sons.

MEMORIAL CHURCH AT ABERDULAIS.—On the 6th inst., the foundation-stone was laid of the St. Anne's Memorial Church at Aberdulais (Neath), by Miss Mary Griffiths, of Resolven. The designs have been prepared by Mr. E. H. Lingen-Barker, of Hereford, and the contract has been entrusted to Mr. Walter Dowland, of Abergavenny. The Gothic style of architecture has been chosen. Sitting accommodation will be afforded for 300 persons.

METROPOLITAN POLICE STATIONS.—For the improvement and enlargement of some of the principal stations within the metropolitan district, certain lands and hereditaments, as follows, are about to be acquired:—St. James's, Westminster: 11,350 ft. superficial, with the police-station and Court in Great Marlborough-street, and No. 20 in that thoroughfare. Hackney: 5,772 ft. superficial, with No. 422, Mare-street, and the police-station next west of St. John's churchyard. St. Pancras: 3,355 ft. superficial, with Nos. 53, 55, and 57, Judd-street, eastwards of Hunter-court. In Kentish-town an area of 11,010 ft. superficial will be taken for purposes of a new police-station on the western side of Kentish-town-road, between the Midland Railway line and Holme's-road (formerly Mansfield-place).

THE HORNE CROSS ESTATE, GREENHITHE.—We understand that the whole of the property, consisting of about fifty acres, and known as the Horne Cross Estate, Greenhithe, has been disposed of by Mr. Frederic W. Fryer, of Walbrook, for the sum of 20,000*l.*, and that Mr. Fryer has been retained by the purchasers to lay out the same and to act as architect and surveyor for the extensive building operations which are to be immediately commenced.

The New Town Hall at Sunderland.—The Mayor of Sunderland (Mr. Robert Shadforth, J.P.), formally opened the New Town Hall on the 7th inst. The buildings have been erected in Fawcett-street, at a cost of about 50,000*l*. The architect was Mr. Brightwen Binyon, F.S.A., of Sunderland. We gave a view of the buildings in the *Builder* for May 21, 1887.

New R.C. Church for Strabane, Ireland.—The ceremony of laying the foundation-stone of the new Catholic church of Mary Immaculate, by the Bishop of the diocese, took place on the 9th inst. at Strabane. The church is to be cruciform in shape, and of dimensions capable of accommodating a large congregation. The architect of the work is Mr. Hague, of Dawson-street, Dublin, and the contractor Mr. R. Cullen, of Portadown.

New Church for Aston.—The foundation stone of the new church of St. James's, Aston, which is to be erected at the junction of Whitehead and Frederick-roads, was laid on the 8th inst. by Mr. S. S. Lloyd. The contract for erecting the chancel, vestry, and chancel aisle—the portion of the work to be carried out first—has been accepted by Mr. T. Collins, of Tewkesbury, from plans of Mr. J. A. Chatwin.

SANITARY AND ENGINEERING NEWS.

Water Filtration at Nantes. — The British Consul at Nantes, in a recent report on the commerce and trade of that district, gives an account of some experiments as to whether it was practicable by means of natural filtration through sand to obtain from the Loire a sufficient quantity of good water to meet the requirements of the city, whose inhabitants numbered, in 1886, over 127,000. At a certain distance up the river, above the city, an artificial islet of sand was constructed on a bed of similar material in the middle of the river and protected against destruction from the waters by a "revêtement" of loose stones. Through this mass of sand a well was sunk into the bed of the river. The well was constructed of stonework, water-tight, with ranges of "barbacans" or apertures filled with small stones to stop the ingress of filth, which could be closed to any degree, so as to prevent the water during overflows of the river from forcing its way into the well too rapidly. The water filtered through the sand into the well was pumped out by steam-power. The experiments were most satisfactory, both as regards the quality and quantity of the water, the former being pronounced to be as clear and limpid as any passed through "Pasteur's" filter, with the advantage of being better aërated. It is estimated that ten of these wells sunk in quincunx would supply all the requirements of Nantes.

The North Channel Tunnel.—The scheme propounded by Mr. Barton, to connect Island Magee, County Antrim, and Wigtonshire, by a tunnel under the North Channel, is an undertaking which, although more stupendous and more costly than a Channel tunnel, is far more likely to be carried out than the pet plan of Sir Edward Watkin. Mr. Barton's tunnel is to be thirty-three miles in length; its greatest depth below the bottom of the sea being 500 ft., and the steepest gradient 1 in 75. We are informed that the undertaking has the support of Sir John Hawkshaw, Sir Benjamin Baker, and Sir Douglas Fox. The estimated total cost of the tunnel is 8,000,000*l*., which seems rather low, and it would take from ten to twelve years to complete it. Of the great importance of the work there can be no doubt; nor would there be any misgiving as to its practicability. The only difficulty to face is the problem of ventilating such a stretch of tunnel, for air-shafts would be out of the question.—*Iron.*

Proposed Plumbers' Registration Centre in Birmingham.—The Mayor (Alderman Clayton) has fixed Wednesday, the 19th inst., for a public meeting at the Central Hall, Corporation-street, in support of the memorial recently forwarded to the Worshipful Company of Plumbers in favour of establishing a registration centre in that city.

FOREIGN AND COLONIAL.

France.—M. Yves Guyot, Minister of Public Works, is to proceed shortly to Yssengeaux (Haute-Loire) to open the new line of railway from that place to Puy.——The Minister of Public Instruction has presented to the Museum of Dieppe a statue by M. Aizelin, "Vestale," and a picture by Paul Colin, "La Ferme de Loysel," both from former Salon exhibitions. Baron Alphonse de Rothschild has presented to the same exhibition M. Hector Lemaire's sculpture group, "Jeune Mère."——Last Sunday the monument to the "Mobiles" of Dordogne killed in the war, of which we have already spoken, was formally inaugurated. The monument is by the sculptor Roubaud.——At Bethune (Pas-de-Calais) a competition has been opened for a new Salle de Fêtes, to cost 150,000 fr. Premiums of 2,500 fr., 1,500 fr., and 1,000 fr. will be awarded for the three best designs.——M. Larroumet, the Directeur des Beaux-Arts, has caused the replacement of the oak shells, formerly surrounding the lead coffins of the Princes of Condé, which are in the crypt of the Abbey of St. Denis. This has been done by the request and at the expense of the Duc d'Aumale.——The Government has just commissioned from M. Turcan Croisy and M. Horace Daillon three stone statues intended to adorn the court of the Louvre, and to represent "Painting," "Sculpture," and "Science."——Millet's celebrated "Angelus" has been bought back again by M. Chauchard at a price of 750,000 f., from the American Art Association, which has however retained the right to exhibit it in America till January next. M. Chauchard, who was one of the founders of the Magasins du Louvre, has already a remarkable collection of pictures.——Next Sunday, at the Mont Parnasse cemetery, the monument erected to the memory of Lançon, the etcher, is to be inaugurated. The monument is the work of M. Chas. Gauthier.——The death is announced of M. Eudoxe Mareille, the learned director of the Museum of Orleans.

Berlin.—The *Verein Berliner Kuenstler* proposes the arrangement of an international Art Exhibition for next year. Although the Government has expressed its approval of such a scheme, and has even promised 2,500*l*. towards the decoration of one of the halls, an ultimate decision has not yet been published by the above society.——Professor Raschdorff (honorary corresponding member of the Royal Institute of British Architects) has received a second class "Kronen Orden" in connexion with the completion of the Potsdam mausoleum of Emperor Frederick III.——Professor Raschdorff's latest design for the proposed Berlin Cathedral is being worked out to a scale of 1·100, and a model of the design is being made; definite proposals, with specifications, &c., will be laid before the Imperial Reichstag next Spring.——Although three important hospitals, with together over 2,100 beds, have been completed in rapid succession, we already hear of proposals for a new one—an accident hospital, the wards of which are to be kept by the different trade societies, who have up till now paid for their sick members lying at the common hospitals.——At a meeting held in connexion with the restoration of the old Prussian Castle Marienburg, near Danzig, it was stated that some 4,700,000 marks would be required to do the work thoroughly; about 900,000 marks are so far available; the sum still required is to be raised by means of a set of five lotteries opened by permission of the Emperor.

The Water Supply of Vienna.—According to the official report on the water supply of Vienna for 1889, the length of water pipes at the close of the year was 297,378 mètres (185 miles), of which 33,604 mètres were outside the city boundary. Of the 13,531 houses of the ten districts of Vienna, 12,104 had been connected with the mains. For watering the streets and public gardens, 993 underground hydrants are provided, while for fire-extinguishing purposes there are 828 hydrants. For controlling the supply to houses, 11,931 water-meters of various construction have been fitted. The average daily water supply amounted to 53,680 cubic mètres (43,702 in winter and 63,657 in summer), or 11,809,600 gallons. The water rates yielded 1,763,743 florins (about 175,000*l*.).

International Exhibition in Rome.—Negotiations are in progress for the holding of an international exhibition, on the same scale as the last one in Paris, in Rome, a few years hence. The president of the committee having the arrangements in hand is Signor Baccelli, ex-Minister of State.

Constantinople.—The new railway station of the Oriental Lines has been opened, in presence of the Sultan.

Natal.—Mr. W. H. Radford, C.E., of Nottingham, has just been appointed consulting engineer for the new waterworks at Newcastle, Natal.

MISCELLANEOUS.

The Surveyors' Institution. — The opening meeting of this Institution for the present session was held on Monday evening last, when the President, Mr. R. C. Driver, delivered an address, part of which we have in type; but we are obliged to hold it over until next week for want of space.

The Proposed New Railway - station Schemes in Edinburgh.—On the 31st ult. an adjourned meeting of the local committee of the National Art Association was held to consider further the schemes for improvement in connexion with railway-station extension in Edinburgh.—Mr. G. S. Aitken, architect, submitted a plan for dealing with the area of the North British railway east and west of the North Bridge. He considered that as the present station roofs to the west cut so much into the North Bridge arches, it was undesirable to entertain the idea of a span-bridge of the usual form, but to treat it as a terrace or embankment, extending it eastward and westward, and lighting the space below by arcades at the sides. The east line of the terrace would be in continuation of the back of the existing buildings at the south end of the North Bridge. The western side of it was represented as about 100 ft. westward of the present west parapet, with a recess in the centre in the form of an octangular bay. The "Place" so formed would be over 200 ft. wide at the broadest part, exclusive of the bay referred to. The station below was assumed to be entirely roofed in on the west as far as the Waverley Bridge, and on the east as far as the Regent arch; the roof of the Eastern section was arranged in two levels, and treated as terraces with flights of steps from the altered North Bridge; that on the west was arranged in one terrace with stairs also from the North Bridge. On the west, a circular two-storied building of moderate height is placed, which would form a point of view from which on two levels the fine prospect westward could be enjoyed; on the east the terraces would serve the same purpose as regards the eastern view; and to conceal the unsightly railway lines which would appear in the hollow between these terraces and the Calton Hill, a domed building with wings was shown which could be used as a winter garden, or for some similar purpose. It was objected that Mr. Aitken's plan filled up too much of the valley, but a vote of thanks to him was passed for it, on the proposal of Professor Baldwin Brown, who said that it might be kept in mind when the North British Company brought forward their plan. Another plan, by Messrs. H. F. Kerr and F. W. Simon was then discussed. This plan was described in the *Scotsman* of October 31. It is based on the assumption that the Caledonian Company should be allowed access to the east end of the city, provided it can be done without injury to the amenity of the city. The route proposed by the directors *viâ* Princes-street, and with a station in the Waverley Market, and under the roadway at the Register House, is open to objection, and has met with great opposition on account of the tunnelling of Princes-street, the unsatisfactory nature of the station accommodation, and for other reasons. The route suggested by Messrs. Kerr & Simon is by tunnel through George-street to a daylight station in St. James's-square, and thence by viaduct over Greenside, and tunnel through Calton-hill to the lines of the Company already authorised at Easter-road. It was resolved that a deputation should wait on the Town Council representing Messrs. Kerr & Simon's plans as preferable to any of the Caledonian Company's schemes, but without binding the Association to it. Since this was in type we have received a newspaper containing Mr. W. Shelford's report to the Town Council on the subject.

The English Iron Trade.—Notwithstanding adverse influences,—a high bank-rate and Stock Exchange panics,—it cannot be said that the English iron market has changed sensibly. There is still a steady, if moderate, trade, prices being fairly well maintained, the reductions which have been made being chiefly attributable to the causes mentioned. The effect of an excited money market would naturally be reflected, in the first place, in that other centre of speculation, the Glasgow warrant market, and this has been the case, constant fluctuations having characterised its course during the past week. Middlesbrough pig has maintained its price, but Bessemer iron in the North-West has lost 1s. per ton. The finished iron market preserves its steady tone almost generally, only manufacturers requiring work consenting to slight reductions. The demand for steel shows no abatement, and ruling prices are in consequence well adhered to. Ship builders continue active, and although the placing of fresh orders is not general, in one or two instances good bookings have been made. Engineers have a respectable amount of work in hand.—*Iron.*

Robert Boyle & Son, Limited.—The directors of Robert Boyle & Son, Limited, ventilating engineers, London and Glasgow, have resolved to recommend a dividend of 12½ per cent., free of income-tax, on the ordinary and deferred shares of the company for the year ending September last, placing to reserve-fund one-sixth of the profits earned, and carrying forward to next year a balance of 1,299*l*. We are informed that the year ended has been the most prosperous since the formation of the company. Mr. Robert Boyle recently visited Egypt, India, China, and Japan, and has surveyed and furnished plans and estimates for the ventilation of the Khedive's palace, Cairo; drainage of Bombay; French Cathedral, Canton; Summer Palace of the Emperor of China, Pekin; New Houses of Parliament, Japan; Imperial University, Japan; also a scheme for the improved sanitation of Pekin.

Glazing.—Messrs. Mellowes & Co., of Sheffield, ask us to state that the extensive range of buildings, consisting of large winter garden, conservatories, and ferneries, erected at Avery Hill, the residence of Colonel North, have been glazed by them with their patent "Eclipse" glazing. The structures are entirely of iron, and the superficial measurement of the roofs is about 45,000 ft. The same firm also inform us that they have obtained a three years' contract from H.M. War Office, for supplying and fixing their "Eclipse" imperishable glazing [tin-lead and steel bars] at the Royal Arsenal, Woolwich, and at the dockyards and other Government establishments.

Library of the late J. G. Crace.—The catalogue of the library of the late Mr. J. G. Crace, which is to be sold early next month by Messrs. Sotheby, includes a considerable number of rare and curious books on subjects connected with architecture, decoration, and building.

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENT.

COMPETITIONS.

Nature of Work.	By whom Advertised	Premium.	Designs to be delivered.
*Designs for Furnishing New Council Chamber	York Corporation	20*l*.	Dec. 1
*Public Offices, &c.	Huyton-with-Roby L.B.	50*l*. 30*l*. and 20*l*.	Jan. 1

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
New Bridge, near Hollybush	Bedwellty Union	W. L. Griffiths	Nov. 18
250 Lamp Pillars	Cardiff Corporation	*Official*	do.
*New Goods Sheds at Old Ford and Birmingham	L. & N. W. R. Co.	do.	Nov. 19
*Sewerage and Waterworks	Cricklade, &c. Union	J. R. Shopland	Nov. 20
Supply of Soft Timber	Manchester Guardians	*Official*	do.
Cast-iron Socket Pipes	Cardiff Corporation	J. A. B. Williams	do.
Lead Service Work, Waterworks	do.	do.	do.
*Making-up Roads	Ealing Local Board	C. Jones	do.
*Batteries, Drill-shed, Magazine, &c.	The Admiralty	*Official*	Nov. 21
New School, Playground, Master's House, &c.	Castlethorpe (Bucks) Sch. Bd.	H. H. Dyer & Son	do.
Residence, Longmorn Estate, Elgin, N.B.	....	Chas. C. Doig	Nov. 22
*Repairs, General Painting, &c. Workhouse	Taunton Union	J. H. Spencer	do.
Iron, Chain, &c. Stores	Tyne Impt. Commrs.	*Official*	do.
*Road and Drainage Works	Battersea Burial Board	do.	Nov. 24
Road Works, Draining, &c.	Harrogate Corporation	Samuel Stead	do.
Pipe Sewers, &c.	Houghton-le-Spring U.R.S.A.	D. Balfour	do.
Roadmaking and Pitching, Godalming	....	S. Welman	do
*Making-up and Paving, with Blue Bricks, Roads	Finchley Local Board	F. Smythe	do.
*Ironwork for Warehouse	Cleator Moor Co-op. Soc. Lim.	*Official*	Nov. 25
Re-hanging Peal of Bells, &c. St. Ive Church, near Liskeard	The Rector	....	do.
Work at Baths and Washhouses	Dublin Corporation	Spencer Harty	do.
Travelling Cranes	India Office	*Official*	do.
*Sinking Well, &c.	Newport (I.W.) Corp.	Baldwin Latham	Nov. 26

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Sewering, Flagging, &c.	Litherland (Liverpool) Local Board	W. B. Garton	Nov. 26
Asphalting Footpaths, &c.	do.	do.	do.
*Roadmaking and Paving Works	Fulham Vestry	W. Sykes	do.
*Drainage Works at Infirmary	Lambeth Guardians	T. W. Aldwinckle	do.
*Roads and Sewers, Dartford	Kent and Essex Land Co. Limited	*Official*	do.
Sewerage, &c.	Sheffield Sewerage & Rivers Committee	G. Alsing	Nov. 28
*Sundry Painting at Myatt's Fields, Camberwell	London County Council	*Official*	Nov. 29
Wrought-iron Tubing, Bolts, Drain Pipes	Cheshire Lines Com.	do.	do.
Board School Extension, Caretaker's House, &c.	Leeds School Board	....	do.
*Supply of Materials and Executing Works	London County Council	*Official*	Dec. 1
*Brick Sewers, &c St. Pancras	do.	do.	do.
New Waterworks, Llanfabon	Pontypridd R.S.A.	G. S. Morgan	Dec. 2
*Stoneware Pipe Sewers, &c.	East Barnet Valley Loc. Bd.	G. W. Brumell	Dec. 8
New Chapel, Workhouse, Oundle	Union Guardians	W. Bucknall and J. N. Comper	Dec. 11
*New Citadel at Sunderland	Salvation Army	W. Gilbee Scott	No date
*Erection of Fireproof Warehouse, Liverpool	W. P. Hartley, Esq.	F. W. Dixon	do.
Additions to House at Cotherstone, near Darlington	W. E. Blackett	Clark & Moscrop	do.
Alterations to Premises, Darlington	....	do.	do.
Alterations and Additions to St. George's House, Leeds	....	Swale & Mitchell	do.
*Samples of Sanitary Fittings	Hornsey Local Board	T. de Courcy Meade	do.
Electric Fittings, &c.	Pontypridd Fire Brig.	*Official*	do.
Sinking Two Pits	Llynvi Valley Colliery	T. M. Price	do.
Alterations to the "Grace Inn," Newcastle	Wm. Pickering	E. Bowman	do.

PUBLIC APPOINTMENT.

Nature of Appointment.	By whom Advertised.	Salary	Applications to be in
*Sanitary Inspector	County of Perth	300*l*.	Nov. 20

Those marked with an Asterisk (*) are advertised in this Number. Competition, p. iv. *Contracts, pp.* iv., vi., *and* viii. *Public Appointments, p.* xvii.

REMOVAL.—Messrs. Davey, Paxman, & Co., of Colchester, have removed their London offices from 139, Queen Victoria-street, to larger and more convenient premises, situate 78, Queen Victoria-street.

TILES.—We have received from Messrs. Malkin & Edge, of Burslem, a well-printed sheet in chromo-lithograph showing a number of their recent tile patterns to a scale of 2 in. to a foot for hearth and wall tiles, and ¾ in. for floor tiles.

ELECTRIC LIGHT IN SURREY.—The installation of the electric light has been completed at Woking, Surrey, and on the 10th inst. the light was supplied for the first time to private consumers. The price charged is 8d. per unit, which is equivalent to 4s. 2d. per 1,000 ft. of gas. Hitherto Woking has had no illuminant other than oil and candles, and there is no system of public lighting whatever. The adoption of electricity in several Surrey towns has long been talked of. Godalming had the electric light some years ago, but it failed on account of the water-power utilised. The inhabitants have now strongly taken up the idea of restarting its production, and Guildford and Dorking have each discussed the advisability of adopting the light. At Weybridge, a residential locality, the electric light has been manufactured successfully for some months.—*Morning Post.*

ST. MARY MAGDALEN, OLD FISH-STREET.—Having been left desolate since the fire of December 2, 1886, which destroyed most of its interior, the Church of St. Mary Magdalen (Old Fish-street) in Knightrider-street, is about to be demolished.* Notice has just been given that the tablets and monuments, together with the remains of those persons buried there, will shortly be removed. Option is given to all interested parties of claiming these memorials, and of providing for re-interment of any remains. Failing this, after December 1 next the latter will be taken to the City of London cemetery at Little Ilford, whilst the memorial stones will be set up in St. Martin's, Ludgate. The latter is now the parish church for the united parishes of St. Mary Magdalen, St. Gregory-by-St. Paul's, and St. Martin, Ludgate.

ST. GABRIEL FENCHURCH AND ANCIENT LIGHTS.—At a sitting of the Consistory Court, in St. Paul's, on the 5th instant, Dr. Tristram, Q.C., Chancellor of the Diocese of London, granted a faculty in respect of St. Gabriel Fenchurch churchyard. The rector and churchwardens asked for authority to license the City of London Real Property Company, occupants of Nos. 35 and 36, Lime-street, to open seven ancient and certain other new lights in their wall, which forms the western wall of the now disused burial-ground. Against this wall some tombstones are placed. All parties agreed to this being done, and to the concurrent removal of the tomb-stones to within the churchyard, upon payment by the company of costs in the matter, and of a sum of 150*l*. to Queen Anne's Bounty for the benefit of the rector for the time being. St. Gabriel's Church, in Langbourne Ward, formerly stood in the thoroughfare of Fenchurch-street. Destroyed by the Great Fire, it was not rebuilt. The parish was united with that of St. Margaret Pattens, in Billingsgate Ward, under section 55 of the Act 22 Charles II., cap. 11, and the churchyard closed by Order in Council in 1853.

LEGAL.

BUILDING BEYOND THE LINE OF FRONTAGE.

THE adjourned hearing of the summonses against the City and South London Railway Company for building stations at the corner of New-street, Kennington-park-road, and Harleyford-road, Kennington-oval, beyond the line of frontage, and without the consent in writing of the London County Council, were heard at Lambeth Police-court, on Monday.—Mr. R. C. Glen supported the summonses on behalf of the London County Council, and Mr. William Graham represented the company.—At the original hearing, it was contended that the company, having built the stations in advance of the general line of frontage, as defined by the Superintending Architect, so covering what had been the forecourts of the houses that formerly stood on the sites, a breach of the law had been committed.—For the defence it was contended that the company were empowered by their private Act to do what they had done, and that its provisions nullified the restrictions in the Metropolis Local Management Acts. At the hearing on Monday, Mr. Greathead, the engineer of the line, Sir Benjamin Baker, one of the consulting engineers to the company, and Mr. Thomas S. Jeulein, general manager of the line, were examined, and gave evidence to the effect that the stations had been built in the most convenient manner for the public.—Mr. Glen said the special Act of the company authorised them to do such things as were necessary for the undertaking, and the onus was on them to show that that could not be done without infringing the general line of frontage. The evidence showed that it could have been done without infringing the line, and, therefore, the general Act applied.—Mr. Graham said there were no public rights or private rights over the gardens except those the company acquired by their Act, He submitted that the company were entitled to do all that was resonably convenient, and that the directors and engineers of the company, so long as they acted as reasonable beings, were the people to judge what was reasonably convenient, and not the County Council.—Mr. Hopkins reserved his decision.

INFRINGEMENT OF BUILDING BY-LAWS.

AT Barnsley on the 5th inst., Mr. William Ritchie, surgeon, of Hoyland, was summoned for two breaches of the building regulations of the Wortley Union Sanitary Authority, by allowing several houses which he had erected at Tankersley, to be inhabited before receiving a certificate of their fitness for habitation from the inspector to the authority. Mr. Beaumont, inspector, proved that the houses had been inhabited and he had not had any application for certificate of fitness, nor of the fact that the houses were sufficiently supplied with water. A fine of 10s. on each charge was imposed.

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MEETINGS.

MONDAY, NOVEMBER 17.

Royal Institute of British Architects.—Business meeting for Members only. 8 p.m.

Royal Academy of Arts.—Professor A. H. Church, M.A., F.R.S., on "Selected and Restricted Palettes." 4 p.m.

TUESDAY, NOVEMBER 18.

Institution of Civil Engineers.—(1.) Further discussion on Mr. John McLaren's paper on "Steam on Common Roads. (2, time permitting) Professor John Milne, F.R.S., and Mr. John McDonald on "The Vibratory Movements of Locomotives." 8 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Mr. A. Wynter Blyth, on "Diseases of Animals in relation to Meat Supply; Characteristics of Vegetables Fish, &c., unfit for Food." 8 p.m.

Leeds and Yorkshire Architectural Society.—Address by the President, Mr. W. H. Thorp, F.R.I.B.A. 7.30 p.m.

Manchester Architectural Association.—Mr. P. E. Barker, on "A Three Months' Tour in Belgium and Northern France." 7.30 p.m.

Glasgow Architectural Association.—Mr. T. Robertson, on "Art in our Home." 8 p.m.

WEDNESDAY, NOVEMBER 19.

Society of Arts.—Opening address of the Session by the Attorney-General, Sir Richard Webster, M.P. 8 p.m.

Institution of Electrical Engineers.—President's Conversazione. From 9 to 12 p.m.

London Society for the Extension of University Teaching (Chelsea Centre).—Mr. Walter Leaf on "Homeric Art: the Shield of Achilles." 5.15 p.m.

British Archæological Association.—Mr. A. G. Langdon on "Ancient Coped Stones in Cornwall." 8 p.m.

Royal Meteorological Society.—Address by the President, Mr. Baldwin Latham, on "The Relation of Ground Water to Disease." 7 p.m.

THURSDAY, NOVEMBER 20.

Royal Academy of Arts.—Professor A. H. Church, M.A., F.R.S., on "Chemistry of Painting: Methods." 4 p.m.

FRIDAY, NOVEMBER 21.

Sanitary Institute (Lectures for Sanitary Officers).—Mr. A. Wynter Blyth on "Sanitary Law—English, Scotch, and Irish; General Enactments, Public Health Act, 1875; Model By-laws," &c.

Junior Engineering Society.—Professor Silvanus P. Thompson, B.A., on "Electro-Magnetic Mechanism." 8 p.m.

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RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

18,951.—KILNS: *W. J. Hague.*—In order to obtain the greatest efficiency in heating kilns by common gas, an air-chamber or passage encircling or partly encircling the base of the gas producer, with an inlet for air, is provided. This communicates with other passages formed in making or disposing the goods in the kiln, and allows the heat to be regulated and preserved.

19,302.—IMPROVED MORTISING-CHISEL: *R. W. Little.*—The extremities of all three walls of the chisel extend so as to lie in the same horizontal plane, assuming the chisel to be vertically placed, but only the middle side or blade is brought to a cutting edge, the others, though very thin, being ground off flat. This construction has an advantage in use, the wood being cut and at the same time taken out of the mortice.

5,974.—IMPROVEMENTS IN GRATES: *F. M. Goodall.*—This invention consists of a removable support with legs forming part of the grate bars, and a frame with ears for attachment to a stove. The grate itself is in two semi-circular sections with hinges, allowing them to be raised and lowered, and the grate shaken. The grate bars may easily be removed altogether to clean or take away ashes.

9,883.—RATTLING WINDOWS: *G. Kendall.*—To prevent sashes from rattling a turn button of a special shape, attached to a vertical strip, and pressing against the sash is used.

11,443.—GYPSUM BRICKS: *A. Buecher.*—In order to overcome the difficulties of making light bricks of gypsum the calcined gypsum is stirred with water, and mixed with specified ingredients and then dried. The advantages claimed for these gypsum bricks are lightness and the direct use of the bricks without mortar plaster, thus excluding vermin.

12,466.—SASH BALANCES: *G. C. Gardner.*—Instead of using sashcord, a wire or thin metallic band, is employed by this inventor for the purpose indicated.

3,462.—BRICKS, AND PLATES OR TILES: *A. von S. Antweiler.*—Enamel bricks, plates or tiles, suitable for construction of friezes, floors, &c., are, according to this invention, made by combining and melting ingredients which are afterwards cooled off and placed in moulds. They are for use in building, and can be made with a polish or lustre, or with a dull surface.

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* For an account of the church (with view) and of the fire see the *Builder* of December 11, 1886.

NEW APPLICATIONS FOR LETTERS PATENT.

October 27.—17,151, G. Dallas, Process for Polishing Wood, &c.—17,153, M. Hirsch and H. Reinisch, Macadam Pavement.—17,176, H. Coleman, Ladders.

October 28.—17,185, J. Florsch, Screw-nails, &c.—17,192, H. Wright, Bracket or Wall Stove.—17,198, R. Bowker, Chimney Tops.—17,205, T. Plevins, Flushing Closets.—17,206, J. Wilson and others, Sliding Windows.—17,238, H. Peake, Weather Strip for Doors and Casement Windows.—17,265, L. Loversidge, Heating Buildings, &c.

October 29.—17,294, W. Press, Window-sash Fastener.—17,315, A. Lamplough, Window-fastenings.

October 30.—17,346, J. Haake, Preparation of Colours for Distempering.—17,385, J. Galley, Burning Cement, &c.

October 31.—17,408, T. and H. Moorwood, Registered Stove Tiled Grates.—17,417, G. Lewin, Door Handles, &c.

November 1.—17,503, J. Bayly, Brick Drier.—17,544, G. Baker, Fire Grates and Furnaces.

PROVISIONAL SPECIFICATIONS ACCEPTED.

7,577, D. White, Filler used in French Polishing.—12,656, T. Normanton, Hanging Sliding Sashes and Doors.—13,832, J. Salt, Brickmaking Machinery, &c.—14,139, J. Taylor and others, Fireplaces, &c.—14,975, F. Orwin, Chimney Pots, &c.—15,534, J. Thornhill, Bolt and Fastener.—15,600, H. Tuke, Making and Pressing Bricks, &c.—15,664, J. Carr, Plank for Scaffolds, &c.—15,996, F. Trier, Stone-dressing Machinery, &c.—16,235, J. Stones and A. Gradwell, Girder Gutter for Ridge-and-Furrow Roofs.—16,284, F. Edwards, Use of Concrete Cement, Artificial Stone, &c., for Building Purposes.—16,372, S. Meggett, Window Fastener.—16,373, J. Littler, Prevention of Steam or Moisture on Windows, Walls, &c.—16,485, S. Bouchier, Window-sash Fasteners.—16,510, J. Wood, Preventing the Escape of Smoke from Chimneys.—16,554, S. Bouchier, Window-sash Fastener.—16,601, A. Kiddie, Sash Fastener.—16,648, H. Allison, Paving Stones.—16,737, J. Archer, Roof Covering.—16,820, J. Crosthwaite, Rain-water Pipes, &c.—16,852, J. Mason and others, Treads for Floors, &c.—16,854, W. Williamson and R. Styles, Stack, Drain, and other Pipes.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to Opposition for Two Months.

19,814, G. Plunkett, Slow Combustion Ventilating Grate or Fireplace.—20,833, W. May and A. Padmore, Window Fastener.—11,978, H. Hilton, Waterproof and Dustproof Glazing without Putty.—15,541, R. Hallenstein, Fireproof Doors for Lift Openings, &c., and Apparatus for Working same.

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SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

OCTOBER 23.—By *Wilkinson & Son:* 53, Regency-sq., Brighton, f.r., 185*l.*, 3,100*l.*

OCTOBER 28.—By *A. Richards* (at Tottenham): 1 and 2, Somerford Villas, Tottenham, u.t. 60 yrs., g.r. 6*l.* 5s., 400*l.*; 1, Kimberley Villas, u.t. 75 yrs., g.r. 7*l.* 17s. 6d., 225*l.*; 6 to 24 (even), Coles-av., Edmonton, u.t. 84 yrs., g.r. 25*l.*, r. 64*l.* 10s., 250*l.*; 4, 5, and 6, Hescott-ter., Winchmore-hill, u.t. 86 yrs., g.r. 7*l.* 10s., 400*l.*

NOVEMBER 3.—By *E. Robins & Hine:* 7, Taunton-pl., Regent's-park, u.t. 19 yrs., g.r. 7*l.* 4s., r. 70*l.*, 440*l.*—By *Luckhurst & Lloyd:* 18 to 21, Bradley-st., Vauxhall, u.t. 35 yrs., g.r. 16*l.*, r. 104*l.*, 605*l.*; 55, Shakespeare-rd., Brixton, u.t. 76 yrs. g.r. 5*l.*, r. 32*l.*, 250*l.*

NOVEMBER 4.—By *F. Jolly & Co.:* "Naylor's Wharf," Rotherhithe-st., Bermondsey, f., 3,150*l.*; 10 and 14, Rotherhithe-st., f., area 4,000 ft., 680*l.*—By *Rutley, Son & Vine:* 151 and 151a, Stanhope-st., Hampstead-rd., u.t. 34 yrs., g.r. 18*l.* 10s., r. 159*l.*, 1,060*l.*; 9, 10, 12, 22, and 24, North Crescent Mews, Euston-rd., u.t. 16 yrs., g.r. 37*l.*, 140*l.*; 22, Sandwich-st., Burton-crescent, u.t. 16 yrs., g.r. 18*l.* 18s., r. 87*l.* 15s., 250*l.*—By *Messrs. Eiloart:* F.g.r. of 75*l.*, with reversion in 57 yrs., Queen's-rd., Peckham, 1,905*l.*: 62 to 76 (even), Queen's-rd., u.t. 57 yrs., g.r. 129*l.*, 5,275*l.*; 80, 82, and 84, Queen's-rd., u.t. 57 yrs., g.r. 29*l.*, r. 153*l.* 10s., 1,635*l.*; 90, Queen's-rd., u.t. 88 yrs., g.r. 16*l.*, 400*l.*; 36 to 42, and 68 to 72 (even), Goodson-rd., Deptford, u.t. 85 yrs., g.r. 31*l.* 10s., r. 163*l.* 12s., 705*l.*; 16 and 18, Edale-rd., u.t. 85 yrs., g.r. 9*l.*, r. 46*l.* 16s., 200*l.*; 9 & 10, Chetwoode-rd., Tooting, u.t. 89 yrs, g.r. 13*l.* 5s., r. 52*l.*, 465*l.*—By *Debenham, Tewson, & Co.:* A block of premises, Rathbone-pl., Oxford-st., area 8,100 ft., u.t. 54 yrs., g.r. 222*l.*, 10,050*l.*; 5, St. Bride-st., City of London, u.t. 62 yrs, g.r. 150*l.*, r. 400*l.*, 3,500*l.*; 78, Westow-hill, Norwood, f., r. 120*l.*, 2,000*l.*; No. 408, Harrow-rd., u.t. 72 yrs., g.r. 10*l.*, r. 70*l.*, 910*l.*; Nos. 453a & 455b, New Cross-rd., u.t. 73 yrs, g r. 12*l.*, r. 210*l.*, 1,900*l.*

NOVEMBER 5.—By *A. Watson:* 11, 13, & 15, Quick-rd, Chiswick, u.t. 78 yrs, g.r. 13*l.* 10s., r. 72*l.* 16s., 320*l.*; 9, Roberts Mews, Hampstead-rd., u.t. 31 yrs., g.r. 6*l.*, 205*l.*—By *Hobson, Rchards, & Co.:* 2 & 10, Beech View Villas, Croydon-rd., u.t. 70 yrs., g.r. 24*l.*, r. 74*l.*, 465*l.*

NOVEMBER 6.—By *J. & R. Kemp & Co.:* 20, Church-lane, Whitechapel, f., r. 48*l.*, 670*l.*—By *Newbon & Harding:* 18, Edward-st., Dorset-sq., u.t. 30 yrs., g.r. 7*l.* 16s., r. 30*l.*, 210*l.*; 18 and 20, Hazelwood-rd., Walthamstow, u.t. 89 yrs., g.r. 8*l.* 8s., r. 46*l.* 16s., 395*l.*; 45, New-st., St. John's-wood, u.t. 37 yrs., g r. 6*l.*, 395*l.*: 47, Westmoreland-pl., City-rd., u.t. 13 yrs., g.r. 5*l.* 5s., r. 28*l.* 12s. 100*l.*—By *J. S. Bridgman:* Appleby-st., Cheshunt, c land, 11a. 0r. 18p., r. 22*l.*, 400*l.*; f. orchard, 1a. 1r 32p., r. 4*l.* 10s., 115*l.*; c. meadow land, 8a. 3r. 18p., r. 13*l.* 10s., 320*l.*; two f. cottages and 2a. 1r. 3p., r. 25*l.*, 450*l.*; an enclosure of f. land, 2a. 2r. 2p., r. 3*l.* 5s. 140*l.*; f. and c. l. and, 3a. 2r. 32p., r. 5*l.* 5s., 170*l.*

[*Contractions used in these lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

PRICES CURRENT OF MATERIALS.

TIMBER.	£.	s.	d.	£.	s.	d.
Greenheart, B.G. ....ton	6	15	0	7	5	0
Teak, E.I. ....load	10	0	0	13	0	0
Sequoia, U.S. ....foot cube	0	2	3	0	3	0
Ash, Canada ....load	2	10	0	4	5	0
Birch "	2	5	0	4	5	0
Elm "	3	10	0	4	15	0
Fir, Dantsic, &c.	2	0	0	3	15	0
Oak "	2	10	0	4	10	0
Canada	4	17	6	6	10	0
Pine, Canada red	2	10	0	3	10	0
" yellow	2	0	0	5	10	0
Lath, Dantsic ....fathom	5	0	0	6	0	0
St. Petersburg	5	0	0	7	0	0
Deals, Finland, 2nd & 1st. std. 100	7	10	0	10	0	0
" " 4th and 3rd	7	0	0	7	5	0
Riga	6	0	0	8	0	0
St. Petersburg, 1st yellow	9	10	0	14	10	0
" 2nd "	7	10	0	9	0	0
" white	7	0	0	10	0	0
Swedish	7	0	0	15	10	0
White Sea	8	0	0	17	0	0
Canada, Pine, 1st	13	0	0	24	0	0
" " 2nd	9	0	0	16	0	0
" " 3rd, &c.	7	0	0	10	0	0
" Spruce, 1st	8	10	0	10	10	0
" " 3rd and 2nd	6	10	0	8	0	0
New Brunswick, &c.	5	10	0	7	10	0
Battens, all kinds	4	10	0	15	10	0
Flooring Boards, sq., 1 in., prepared, First	0	10	0	0	14	0
Second	0	8	0	0	10	6
Other qualities	0	5	6	0	7	9
Cedar, Cuba ....foot	0	0	4	0	0	5
Honduras, &c.	0	0	3½	0	0	4½
Mahogany, Cuba	0	0	4½	0	0	6½
St. Domingo, cargo average	0	0	4½	0	0	6½
Mexican "	0	0	4½	0	0	5½
Tobasco "	0	0	5½	0	0	6½
Honduras "	0	0	5½	0	0	6½
Box, Turkey ....ton	4	0	0	13	0	0
Rose, Rio	12	0	0	19	0	0
Bahia	10	0	0	18	0	0
Satin, St. Domingo ....foot	0	0	9	0	1	3
Porto Rico	0	0	10	0	1	6
Walnut, Italian	0	0	4	0	0	7
METALS.						
IRON—Bar, Welsh, in London tn	6	10	0	6	17	6
" " at works in Wales	6	0	0	6	10	0
" Staffordshire, in London	7	0	0	8	0	0
COPPER—British, cake and ingot	62	0	0	0	0	0
Best selected	63	10	0	64	10	0
Sheets, strong	0	0	0	0	0	0
Chili, bars	56	15	0	0	0	0
YELLOW METAL ....lb.	0	0	6⅜	0	0	6⅜
LEAD—Pig, Spanish ....ton	14	2	6	14	5	0
English, com. brands	14	7	6	14	10	0
Sheet, English, 3 lbs. per square foot and upwards	16	0	0	0	0	0
Pipe	16	10	0	0	0	0
ZINC—English sheet ....ton	27	5	0	27	10	0
TIN—Straits	94	10	0	0	0	0
Australian	94	10	0	0	0	0
English Ingots	98	0	0	0	0	0
OILS.						
Linseed ....ton	22	0	0	22	7	6
Cocoanut, Cochin	33	10	0	34	0	0
" Ceylon	32	0	0	32	10	0
Palm, Lagos	28	10	0	0	0	0
Rapeseed, English pale	28	10	0	0	0	0
" brown	27	5	0	0	0	0
Cottonseed, refined	19	10	0	0	0	0
Tallow and Oleine	21	0	0	40	0	0
Lubricating, U.S.	5	0	0	6	0	0
" refined	7	10	0	12	0	0
TAR—Stockholm ....barrel	1	0	0	1	1	0
Archangel	0	14	0	0	0	0

TENDERS.

[Communications for insertion under this heading must reach us *not later than* 12 *noon on Thursdays.*]

BAILDON.—Accepted for building villa residences at Baildon, Shipley, for Mr. John Spink. Mr. John Waugh, engineer, Sunbridge, Chambers, Bradford:—

	£	s.	d.
Thomas Myers, Baildon, *Mason*	£1,330	0	0
Wilkinson & Dawson, Bradford, *Joiners*	1,000	0	0
Brook, Walker, & Pitchers, Bradford, *Plumbers*	290	0	0
B. Dixon & Co., Bradford, *Plasterers*	280	0	0
Hill & Nelson, Bradford, *Slaters*	70	0	0
Harland & Son, Bradford, *Painters*	35	0	0

BARNET.—For the construction of pipe-sewers, &c., at Barnet for the Barnet Local Board. Mr. W. H. Mansbridge, Surveyor, 140, High-street, Barnet:—

Pizzey	£1,453	12	8	Bell	£1,129	0	0
Dickson	1,359	10	0	Schofield	1,127	0	0
Bottoms	1,275	0	0	Badham	1,114	17	0
Stroud	1,229	6	9	Killingback	1,100	0	0
Garton	1,220	0	0	Bloomfield	1,070	0	0
Willmott	1,165	0	0	Nickolls	1,066	0	0
Butcher	1,136	0	0				

BARNET.—For works to be done in making up two roads at Barnet, for the Barnet Local Board. Mr. W. H. Mansbridge, Surveyor, 140, High-street, Barnet:—

Ravenscroft Park-road.

Capper	£480	0	0	Mowlem	£332	0	0
Dickson	414	0	0	Killingback	307	0	0
Nickolls	344	6	0	Bell	300	10	0
Pye	342	15	0	Wheeler	299	19	8

Marriott-road.

Capper	£480	0	0	Mowlem	£345	0	0
Dickson	420	6	0	Bell	329	0	0
Pye	357	0	0	Killingback	320	0	0
Nickolls	354	0	0	Wheeler	298	10	0

BARROW-IN-FURNESS.—For alterations, &c., at the Oxford-street Board School. Mr. John Harrison, architect, Barrow-in-Furness:—

Thomas Brown (accepted) £1,410 16 0

BECKENHAM (Kent).—For the erection of three villa residences at Beckenham. Mr. Fred. G. Grierson, architect, 9, Old Jewry-chambers, E.C.:—

G. Pullen, Croydon (accepted) £900

[No competition.]

BRENTWOOD.—For the erection of a covered brick building and construction of swimming-bath within, at the Schools, Brentwood. Mr. W. A. Finch, architect, 76, Victoria Park-road, South Hackney, N.E.:—

W. Neil	£1,583	J. H. Mollett	£1,396
F. J. Coxhead	1,579		

[Consideration adjourned until November 19, 1890. The Board had passed a resolution that the bath should be provided at a cost not exceeding £1,000.]

BRIMSDOWN (Middlesex).—For repairs and decorations to four houses, in Osborne-road and Brimsdown-avenue, for Mr. G. A. Baker:—

W. C. Eady, Kilburn, N.W. (accepted) £162 0 0

BROOKEBOROUGH (Ireland).—For the erection of a Memorial Hall, at Brookeborough, co. Fermanagh, for Col. Doran. Mr. Thomas Elliott, architect, Enniskillen:—

James Harvey	£692	0	0
McLaughlen & Harvey, Belfast (accepted)	675	0	0

BURNLEY.—For the erection of proposed United Methodist Free Church, Claremont-street, Padiham-road, Burnley. Mr. V. Dunkerley, architect, Bank-chambers, Burnley:—

Masons.

Allinson & Gill	£1,049	Geo. Read & Sons	£894
A. & R. Parker	1,030	Smith Bros. (accepted)	885
J. & A. Parker	997	R. Bell	874
G. H. Cudworth	900	[All of Burnley.]	

Joiners.

Illingworth Bros., Bradford	£1,080	Geo. Smith & Sons	£1,025
John Hanson	1,062	Robt. Brown	985
R. Dean & Sons	1,055	A. & A. Clegg, Burnley*	927
		John Wiseman & Son	890

* Accepted.

CARLISLE.—For pulling-down, altering, and rebuilding premises in Castle-street, Carlisle, for Mr. J. R. Creighton. Mr. Geo. Dale Oliver, architect, Bank-chambers, Carlisle:—

J. Metcalfe, Carlisle (accepted at schedule of prices).

[Seven other tenders received.]

CHARLTON KINGS.—For the erection of office and cart-shed, building boundary walls, &c., at Charlton Kings, Cheltenham, for the Charlton Kings Local Board. Mr. Jas. Villar, Surveyor, 1a, Cambray, Cheltenham:—

A. Cleevely	£273	10	0	John Cox	£243	17	4
Chas. Malvern	257	19	0	W. T. & R. A. Hunt, Cheltenham*	195	0	0
C. H. Channon	244	0	0				

* Accepted.

CLEATOR MOOR.—For building warehouse at Cleator Moor, Carnforth, for the Cleator Moor Co-operative Society, Limited:—

Masons.

Lister, McCartney, & Lister	£1,343	5	0
R. & D. Pearson, Cleator Moor (accepted)	1,284	16	0

Joiners.

J. Martindale	£583	15	10
Chapple & Son	440	0	0
J. Nicholson, Cleator Moor (accepted)	425	0	0

Slaters.

T. C. Boadle	£124	10	0	J. Walker	£88	0	0
J. Whitfield	91	0	0	T. Mandle, Maryport*	83	10	0

* Accepted.

Plumbers.

J. T. Dickinson	£59	19	6	Jackson & Sumpton, Cleator Moor*	£53	10	0
Hy. Burns	54	10	0				
Wm. Strathern	54	0	0				

* Accepted.

COVENTRY.—For re-building the "Plough" Inn, Spon-street, Coventry, for Mr. J. Eadie. Mr. Herbert W. Chattaway, architect, Trinity Churchyard, Coventry:—

Bowen	£1,780	C. G. Hill	£1,600
J. Worwood	1,680	Lowe & Sons, Burton-on-Trent*	1,542
Kite	1,625	Heatherley Bros.	1,521
C. Haywood	1,620		
Wilkinson	1,619		

* Accepted.

DITCHINGHAM.—For the erection of a malthouse, at Ditchingham, Norfolk, for Messrs. R. & W. Mann. Messrs. Henry Stopes & Co., architects, 24, Southwark-street, London, S.E. Quantities by the architects:—

Holland & Hannen	£8,865	0	F. Dupont	£7,250	0
S. & W. Pattinson	8,557	0	W. Cork, Great Yarmouth (accepted)	7,195	0
Downing & Sons	8,355	0	W. Evans	7,163	10
R. Morriss	8,340	0			

FOREST GATE.—For the completion of an addition to the "Princess Alice" Hotel, Forest Gate, for Mr. C. J. Knowler. Mr. J. F. Wesley, architect:—

Harris & Wardrop	£2,294	G. Sharp	£2,040
J. Mortar	2,260	W. Shurmur	1,998
Watson	2,244	Atherton & Latta	1,795

FRIMLEY (Surrey).—For new drainage, sanitary appointments, and improvements to "Whitegates," for Colonel O'Grady Haly. Mr. H. Hardwicke Langston, architect, 9, Gt. James-street, Bedford-row:—

John Smeaton, London (accepted) £130 0 0

HAMPTON.—For building stabling and coachhouse, at Hampton, for Sir Hector Hay. Mr. P. B. Freeman, architect, 6, Gray's Inn square:—

Albert Monk, Edmonton (accepted) £290 0 0

[No competition.]

IRVINE (N.B.).—For the supply of 1,250 tons of cast-iron water-pipes, at Irvine, N.B., for the Irvine Corporation. Messrs. J. & A. Leslie & Reid, engineers, 72a, George-street, Edinburgh:—

Macfarlane, Strang & Co.	£8,300	5	6	T. Edington & Sons	£7,974	15	9
R. Maclaren & Co.	7,976	16	6	R. Laidlaw & Son	7,869	14	6
				D. Y. Stewart & Co.*	7,580	5	10

* Accepted. [All of Glasgow.]

LEEK.—For draining, levelling, asphalting, &c., roads at the cemetery extension at Leek, Staffs., for the Leek Improvement Commissioners. Mr. Jno. Myatt, Town Surveyor, Town Hall, Leek, Staffs.:—

Contract No. 1.

Jas. Heath	£320	0	Thos. Grace, Leek*	£275	10
Jas. Nixon	285	0			

Contract No. 2.

	Knivedon Stone for Pitching.	Ladderedge Stone for Pitching.
W. Vaughan	£560 0 0	£530 0 0
Thos. Grace	498 0 0	—
A. Turner & Sons	493 0 0	465 0 0
F. Barke, Stoke-on-Trent*	475 0 0	—

* Accepted.

LEITH.—For paving Burlington-street and Jessfield-terrace, Leith, for the Magistrates and Council. Mr. William Peatsan, Burgh Surveyor, Town Hall, Leith, N.B.:—

J. W. & G. Strattan	£480	0	0	Robert Donaldson	£418	9	11
R. C. Brener	476	19	1	John Hobbie, Leith*	395	10	2
James Young & Sons	427	17	6	James Jamieson†	363	10	5

* Accepted. † Burlington-street only.

LEYTON.—For alterations and additions to the "Baker's Arms, Hoe-street, Leyton, E., for Mr. Oyler. Mr. R. Dixon, architect:—

W Smith	£3,420	Wm. Shurmur	£3,196
J. Smith & Sons	3,274	J. Beale	3,062
Mattock Bros.	3,233	Walker Bros.	2,990

LONDON.—For the erection of new premises at Temple Avenue, for the Argus Printing Company. Mr. H. H. Collins, architect:—

Hall & Beddall	£14,595	T. Boyce	£13,870
J. Mortar	14,500	W. Downs	13,690
Bywaters	14,500	C. W. Ward & Co.	13,564
Dove Bros.	14,480	Ashby & Horner	13,490
Patman & Fotheringham	14,410	Lascelles	13,470
J. T. Chappell	14,350	Jas. Kirk	13,422
Colls & Son	14,335	W. Shurmur	13,275
Peto Bros.	14,094	Paramore, Margate	13,095

LONDON.—For the construction of pipe sewers, with manholes, &c., at Bethnal Green, for the Vestry of St. Matthew, Bethnal Green. Mr. F. W. Barratt, Surveyor, Church-row, Bethnal Green, E. :—

G. G. Rutty	£685 0	S. W. Hawkins	£446 10
T. Adams	588 0	G. Wilson	440 10
Killingback & Co.	527 0	A. W. & J. Porter, Lea bridge-road (accepted)	425 0
Geo. Bell	496 0		

LONDON.—For the erection of buildings at Brandon-road, for Mr. Currell. Mr. W. Smith, architect, 65, Chancery-lane, W.C. :—

Lark & Son	£484	Dearing & Son	£437
Langham	488	Boston	430
Ward & Lamble	479	Stevens Bros.	428

LONDON.—For alterations to the "Hanbury Arms," Linton-street, New North-road. Mr. W. D. Church, architect:—

Hughes	£590	Hood	£497
Shurmur	529	Tinson	430
Thomson	509		

LONDON.—For alterations to the boiler-house, &c., at the Abbey Mills Pumping Station, for the London County Council. Mr. A. R. Binnie, Engineer :—

J. Mowlem & Co.	£10,934 0 0	W. Neil	£6,898 19 2

LONDON.—Accepted for climax steel casements and wrought-iron sashes and casements at the People's Palace, Mile End-road, for the Drapers' Company. Mr. Chas. Reilly, architect, St. Swithen's-lane :—

Williams & Co., 18, Berners-street £344 5 0

LONDON.—For additional repairs to houses at Wickham-place, Tabard-street, Borough, for the Trustees of the Randell Estate. Messrs. Waring & Nicholson, architects, 55, Parliament-street, S.W. :—

W. C. Rady, Kilburn, N.W. (accepted) £320 0 0

LONDON.—For alterations to the "Marquis of Lorne" public-house, St. Martin's-lane, W.C., for Mr. Johnson. Mr. H. W. Budd, architect, 76, Vincent-square, S.W. :—

Evans	£627	Charteris	£470
Lamble	519	Masters (accepted)	457
Prestige & Co.	487	Do. * fittings and fixtures	292

* Accepted.

LONDON. — For alterations at the "Hen and Chickens public-house, Rivington-street, St. Luke's, E.C. Mr. H. W. Budd, architect, 76, Vincent-square, S.W. :—

Prestige & Co.	£312	Warne	£295
Thomas	305	Masters (accepted)	283

LONDON.—For alterations and additions to the "Radnor Arms," Mildmay-grove, N., for Mr. L. P. Froud. Mr. E. E. Niblett, architect, Hackney :—

S. & W. L. Ransom	£325	H. Burman & Sons*	£299
T. Heath	316		

* Accepted.

LONDON.—For alterations and additions to the Italian Embassy, 20, Grosvenor-square, W., for his Excellency the Italian Ambassador. Mr. Robert Willey, architect, Ludgate Chambers, 66, Ludgate-hill, E.C. :—

Woodward	£950	Ashby Bros	£695
Bywaters	780		

LONDON.—For alterations at "The Alberfeldy" tavern, East India Dock-road, for Mr. W. Davis. Mr. R. A. Lewcock, architect, 88, Bishopsgate-street Within :—

Spencer	£845 0	Goodall	£668 0
Courtney & Fairbairn	795 0	Walker Bros.	646 0
Reed	768 0	Hood	565 0
Todd	767 0	W. Higgs	547 10
Salt	748 0		

LONDON.—For alterations to the "Three Nuns" Hotel, High-street, Aldgate, for Mr. F. W. Ayres. Mr. R. A. Lewcock, architect, 88, Bishopsgate-street Within :—

Voller	£1,409	Hood	£983
Goodall	1,063	Courtney & Fairbairn	980
Todd	1,009	W. Higgs, Harmar-street, Hackney-road (accepted)	923
Spencer	990		

LONDON. — For the re-erection of premises, Queen's Head-passage, Newgate-street, for the Rev. J. F. Cudmore. Mr. John Hamilton, architect :—

Saby & Son	£717	Beale	£450
Wm. Shurmur	549	Hayworth	413
Godfrey & Son	507		

LONDON.—For alterations at Stanhope House, Atkins-road, Clapham-park, for Mr. W. Stock :—

T. Potterton (accepted) £430 0 0

NEWCASTLE-ON-TYNE.—For additions to schools, Newcastle-on-Tyne. Messrs. Plummer & Burrell, architects, Newcastle :—

James Smart, Newcastle (accepted) £345 0 0

READING.—For the erection of a new church, "Farley Hill," near Reading. Mr. G. Truefitt, architect, 5, Bloomsbury-square, W.C. :—

Bryan	£2,069	W. H. Sawle	£1,700
Silver & Son	1,747	J. Botterill & Son	1,535

STONE (Staffs).—For metalling, paving, sewering, &c., Granville-terrace, Stone, Staffs, for the Local Board. Mr. Jno. J. Chapman, Surveyor, Local Board Offices, Stone, Staffs :—

A. Turner & Son	£170	Fred. Barke	£135
Wm. Whitfield	145		

SWANSEA.—For the erection of hotel premises at Old Bay View Recreation Grounds, Swansea. Mr. H. C. Portsmouth, architect, Castle Buildings, Swansea :—

Bennett Bros., Swansea (accepted) £1,330 0 0

WALTHAMSTOW.—For building cookery-room and additional class-rooms at the Maynard-road Schools, for the Walthamstow School Board. Mr. W. A. Longmore, architect, Bridge-chambers, Walthamstow :—

Challis	£2,216	Sayer	£2,031
Amey	2,144	Reed	1,998
Ward, Clarke, & Co.	2,143	Barton	1,990
Thomerson	2,134	Wallis	1,979
Evans	2,098	Kay	1,940
Watling & Son	2,097	Scott	1,850
Dabbs	2,092	Coxhead	1,841
Batley	2,079	Cracknell (accepted)	1,509

WALTHAMSTOW.—For the erection of barracks, and also for six shops and houses in High-street, for the Salvation Army. Mr. W. Gilbee Scott, architect, 25, Bedford-row. No quantities supplied :—

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